NAVAL FIGHTERS NUMBER FORTY - TWO

LOCKHEED T2V-1/T-1A

Seastar

BY STEVE GINTER

FRONT COVER: T-1A 142263 in 1964 while assigned to MARS-37 (tail code QF). (National Archives)

INTRODUCTION

This book on the Lockheed T2V-1/T-1A Seastar will be different in scope from most of the books in the Naval Fighters series. Although it was an important yeoman and training aircraft for the Navy and the Marines, it was assigned to very few squadrons as a primary aircraft and therefore did not develope much of a history in aviation. What history that was created was more from an individual aircraft perspective.

Anyone having photos or other information on this, or any other naval or marine aircraft, may submit them for possible inclusion in future issues. Any material submitted will become the property of NAVAL FIGHTERS unless prior arrangement is made. Individuals are responsible for security clearance of any material before submission.

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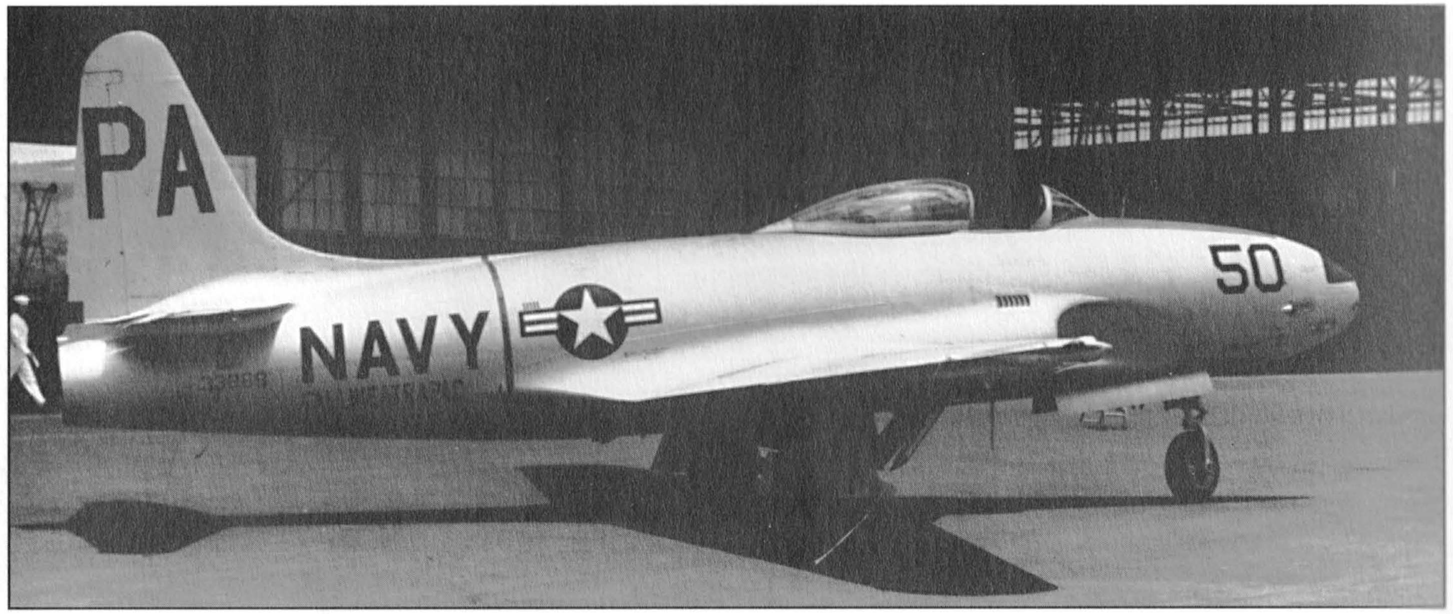
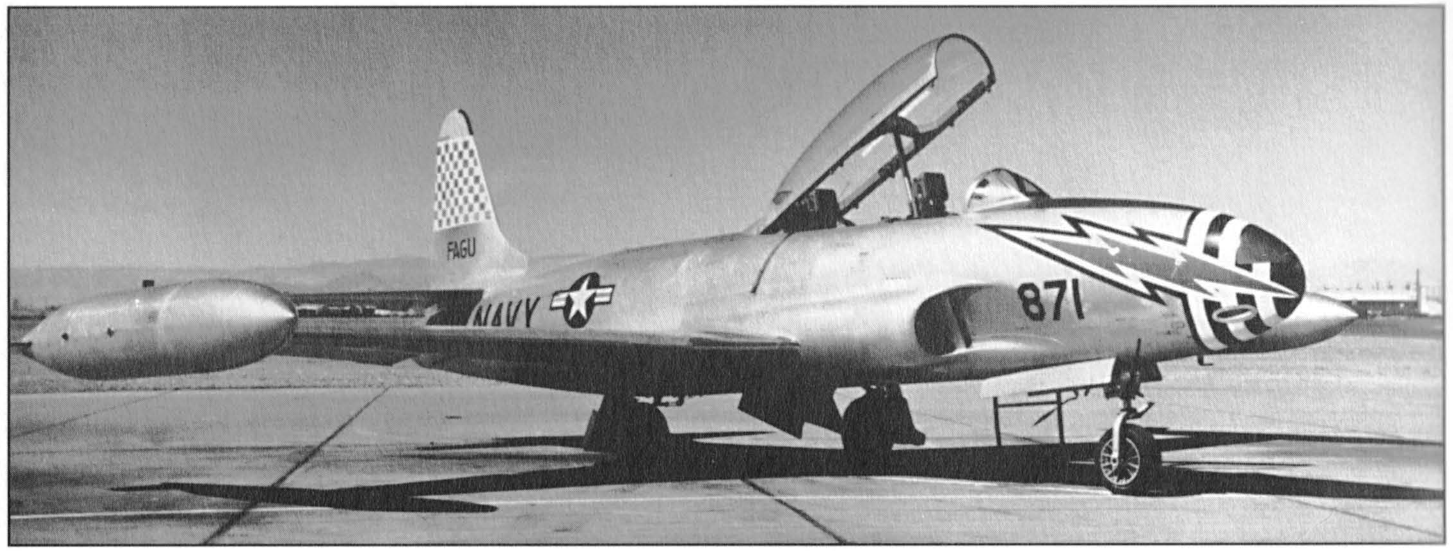
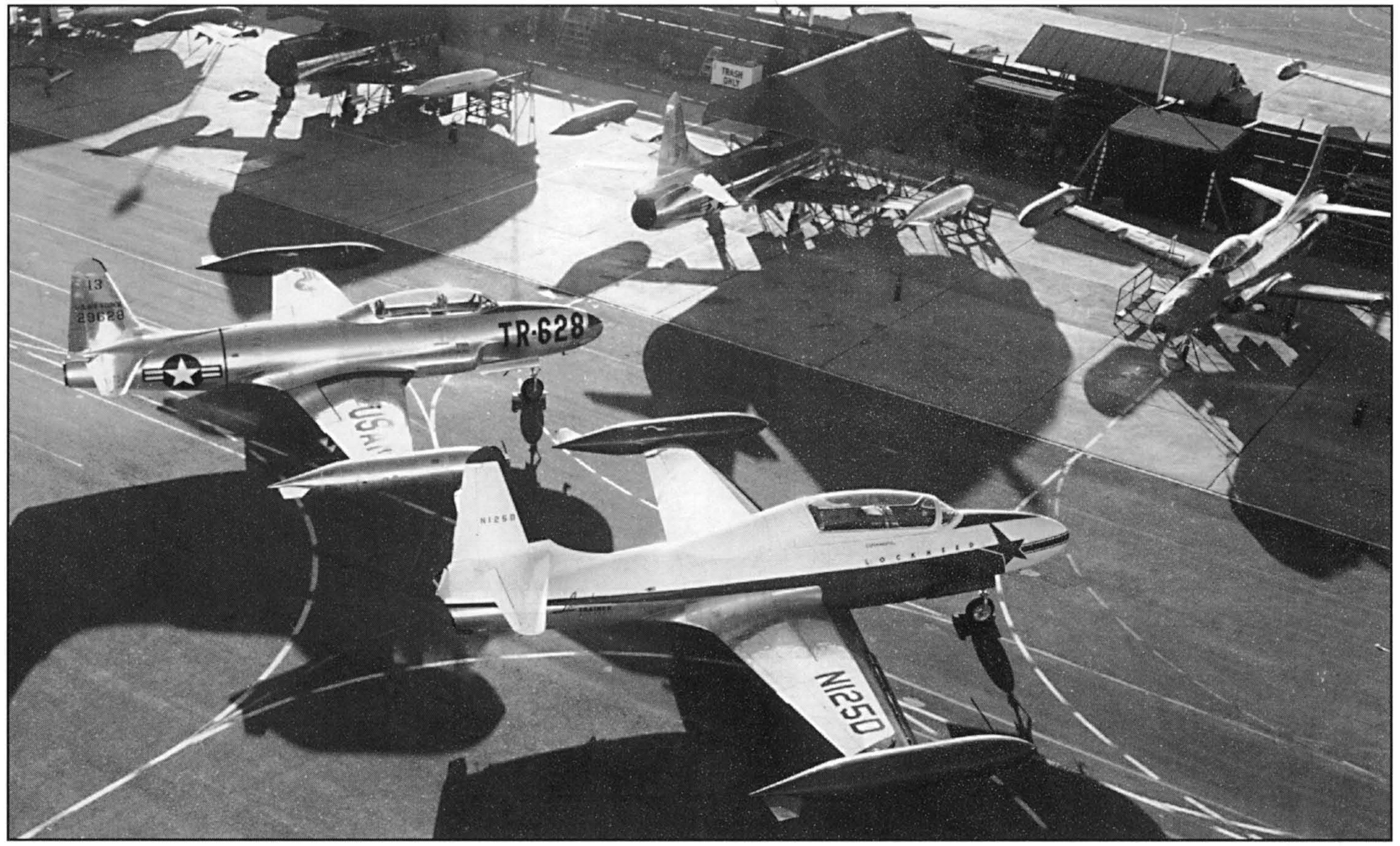
Below, the Seastar traced it's ancestry to the Lockheed P-80/F-80, known in the Navy as the TO-1/TV-1. This TV-1 was assigned to All Weather Training Unit Pacific. (USN via Lawson) Bottom, the F-80 was developed into the T-33 trainer, known in the Navy as the TV-2/T-33B seen here assigned to the Fleet Air Gunnery Unit. (via Pima Air and Space Museum)





LOCKHEED T2V-1/T-1A SEASTAR



Above, rollout of the prototype T2V-1, N125D, at Burbank. An Air Force T-33 is parked next to the Seastar for comparison. F-94 Starfires undergo outdoor assembly in the background (Lockheed)

BACKGROUND

Lockheed had an early lock on military jet trainer production in the United States with its very successful two-seat derivative of the P-80/F-80 Shooting Star, the T-33A/TV-2. As good as the T-Bird was, Lockheed believed a much more capable trainer could be developed from the basic T-33 design. As a private venture, under the guidance of Kelly Johnson, Lockheed sought to improve the instructor's visibility and the aircraft's low-speed handling characteristics. These changes, along with a redesigned and strengthened landing gear, would allow the aircraft to be considered for a carrier trainer.

The design was designated L-245 and Lockheed proceeded by buying back an uncompleted T-33A airframe from the Air Force (construction number 580-7321, serial number 52-9255) for modification into the prototype aircraft. It was referred to by Lockheed as the Lockheed Trainer and was assigned civil registration N125D.

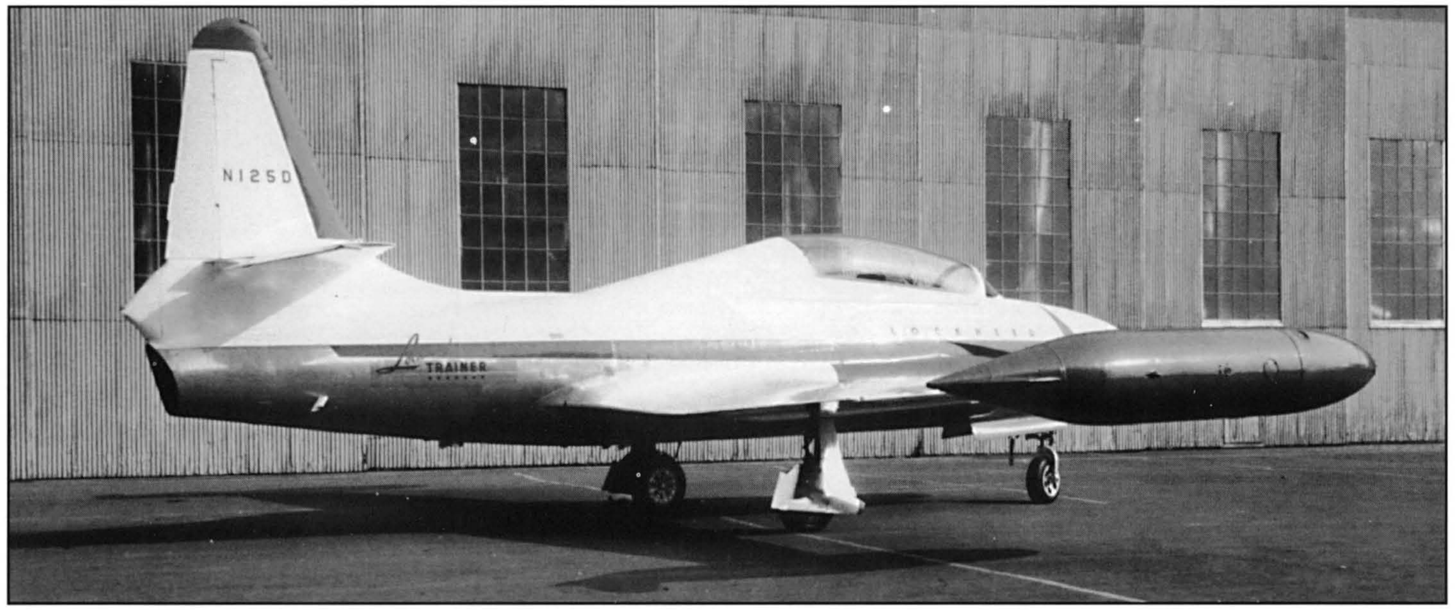
The Lockheed trainer differed from the T-33 by having a redesigned cockpit and canopy in which the rear cockpit's instructor seat was raised six inches. The reduction of both landing and take-off speeds and the improvement in low-speed handling characteristics were accomplished through the following: incorporation of leading edge slats, enlarged tail surfaces, and a system of boundary-layer control. The boundry layer control system would be the first usage of such a system on a production aircraft in the United States. The system bled compressed air from the engine compressor chambers and discharged through slots over the top of the slats.

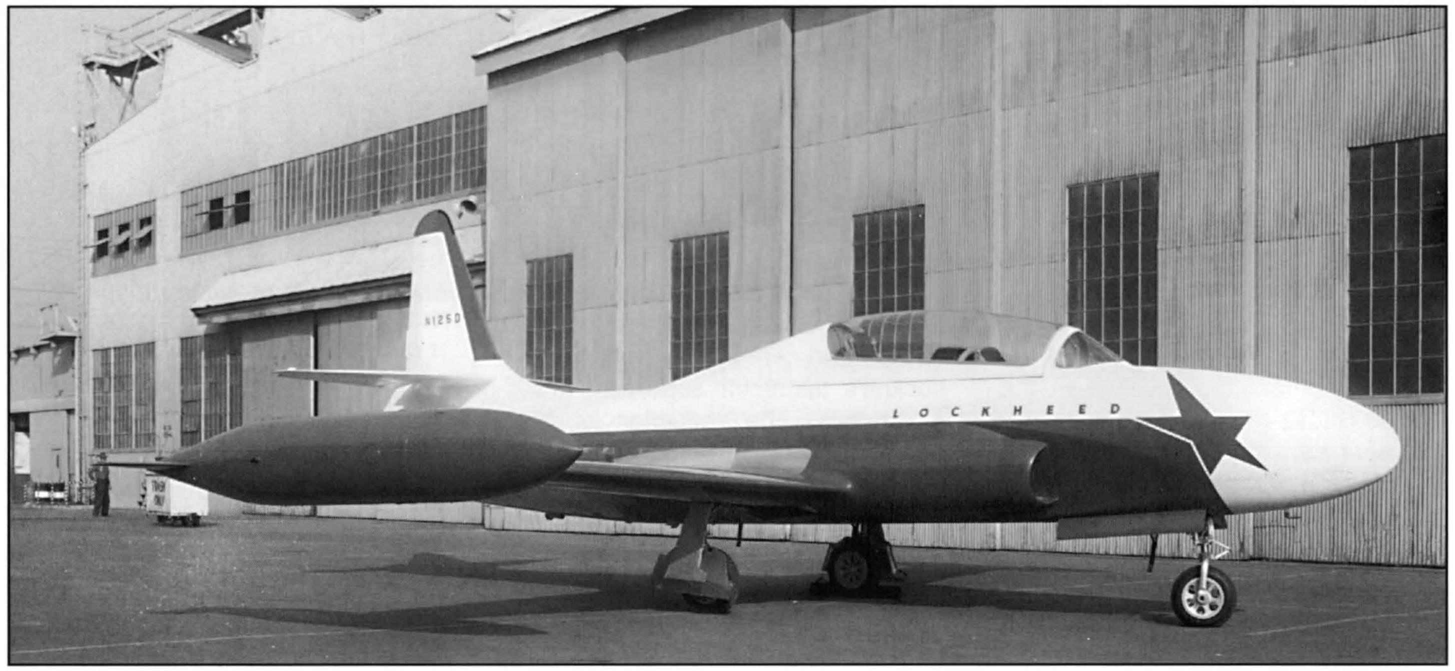
The aircraft was completed in November 1953 and was first flown from Lockheed's Burbank facility on 16 December. Initial flight tests dictated the installation of a dorsal fin to correct instability caused by the new raised canopy. The air intakes and the tailpipe area were also redesigned for optimum performance of the 5,400 pound thrust Allison J33-A-16A turbojet engine.

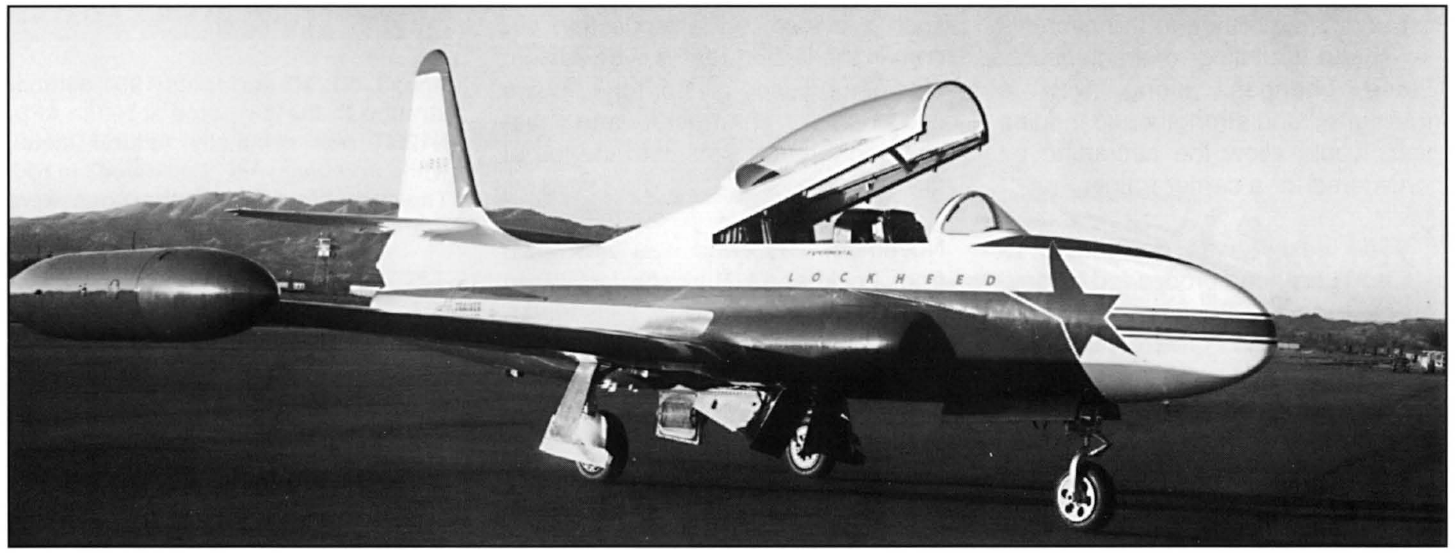
Above, N125D during its 1954 demonstration to the Air Force at Nellis AFB. N125D was originally natural metal, white and blue with "Lockheed" in red. The two thin lines on the nose were red, too. (via Robert Dorr)

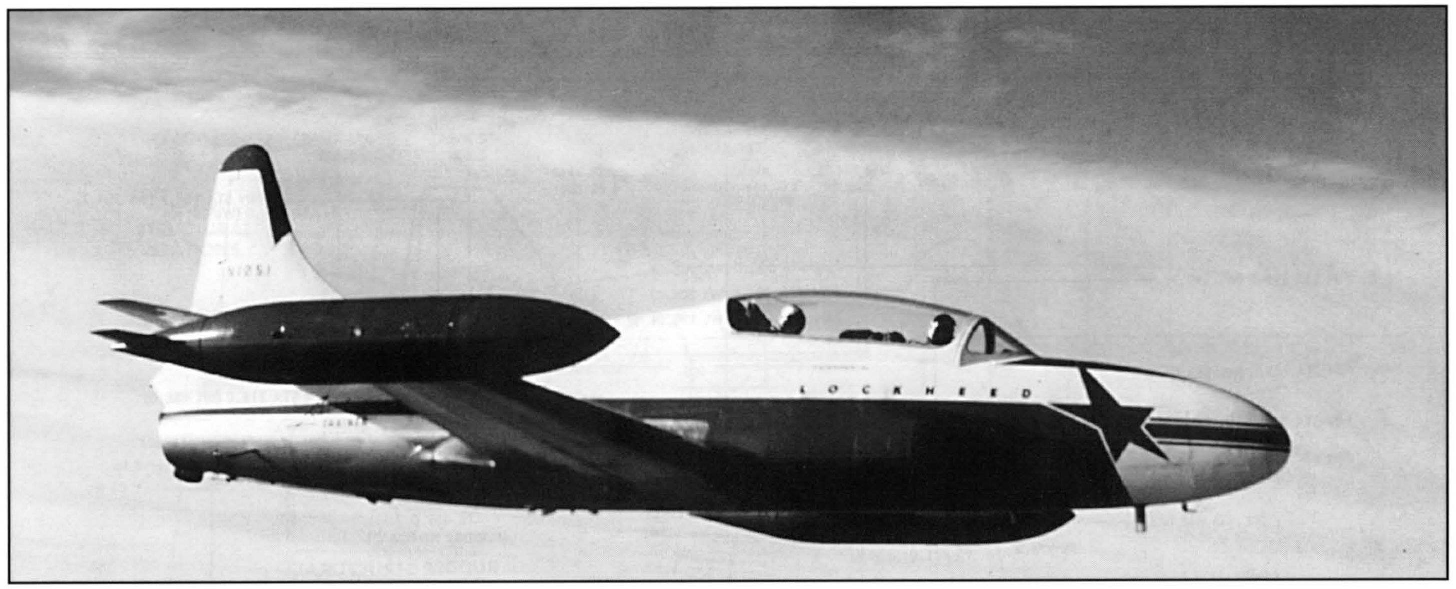
In May 1954, Lockheed was awarded a Navy contract for eight T2V-1 carrier trainers (BuNos 142261-142268) with strengthened airframe and landing gear. An updated J-33A-24/24A engine of 6,100 pounds of trust was specified to handle the increased weight.

ROLLOUT OF COMPANY DEMONSTRATOR N125D

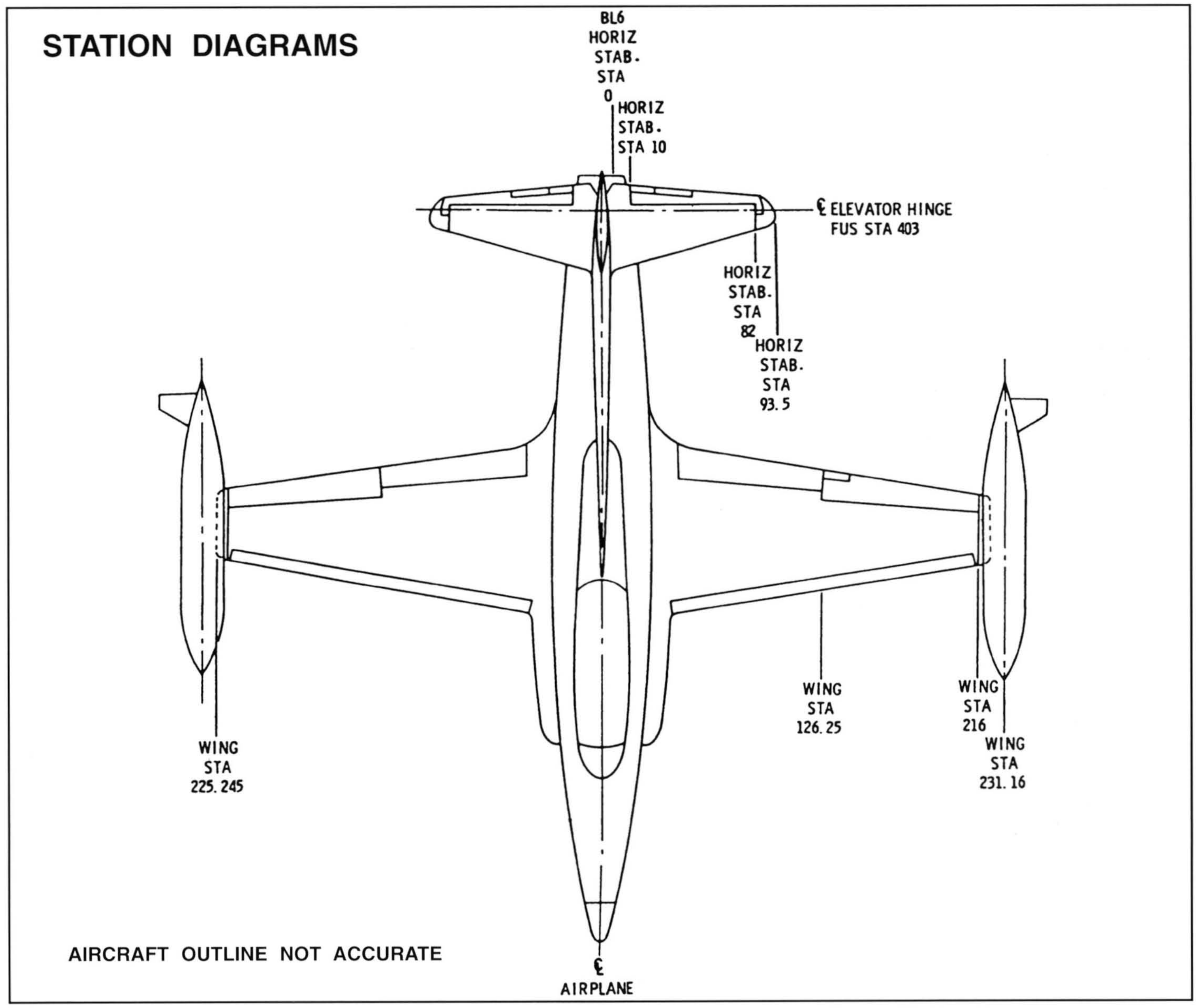




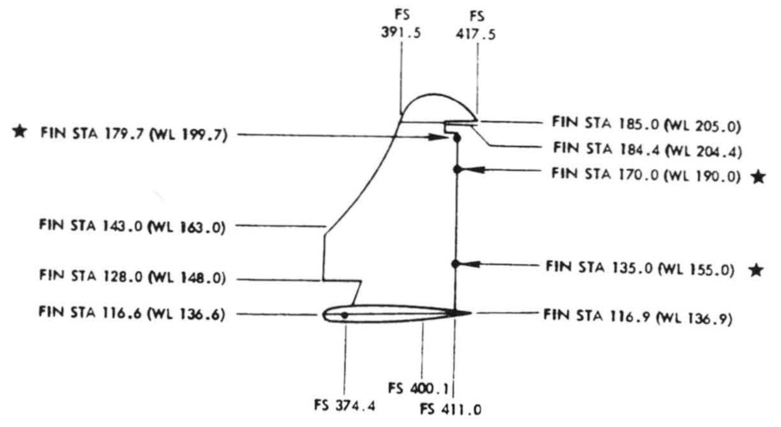




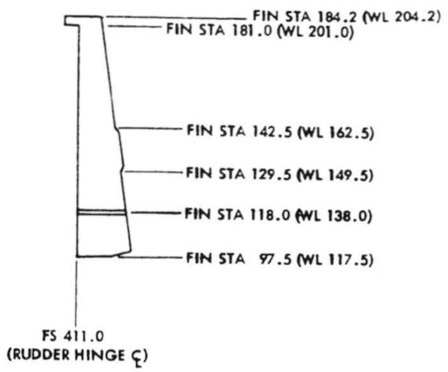
At left, the T2V-1 as seen on rollout day lacked the stabilizing dorsal fillet that would extend from the aft end of the canopy to the vertical fin. This modification was added shortly after Lockheed started flight testing. The original paint scheme was white, blue and natural metal. (Lockheed) Above, first flight photo of N125D. (Lockheed)



FUSELAGE STATION DIAGRAMS

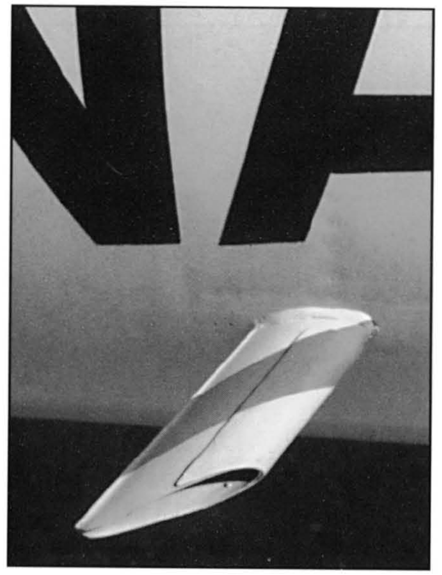


FIN STRUCTURAL STATIONS

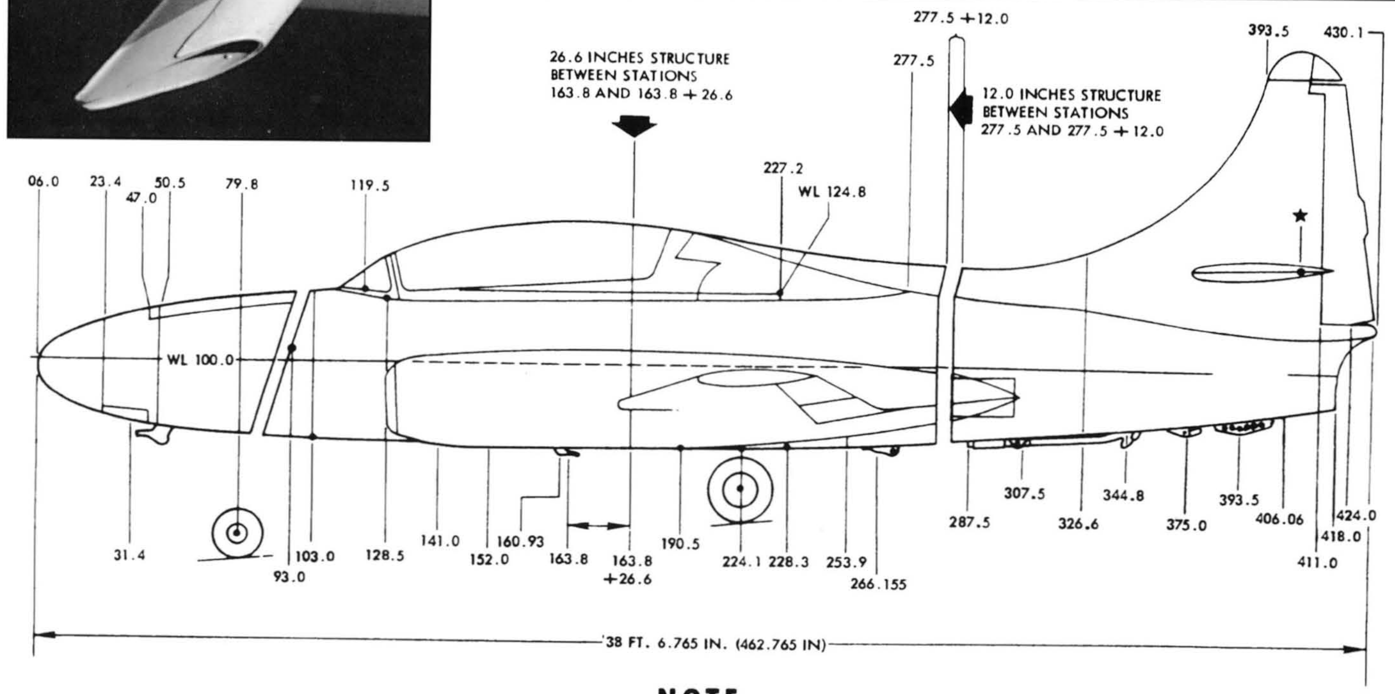


RUDDER STRUCTURAL STATIONS

Below, fuel vent on the right aft fuselage. (Doug Slowiak)



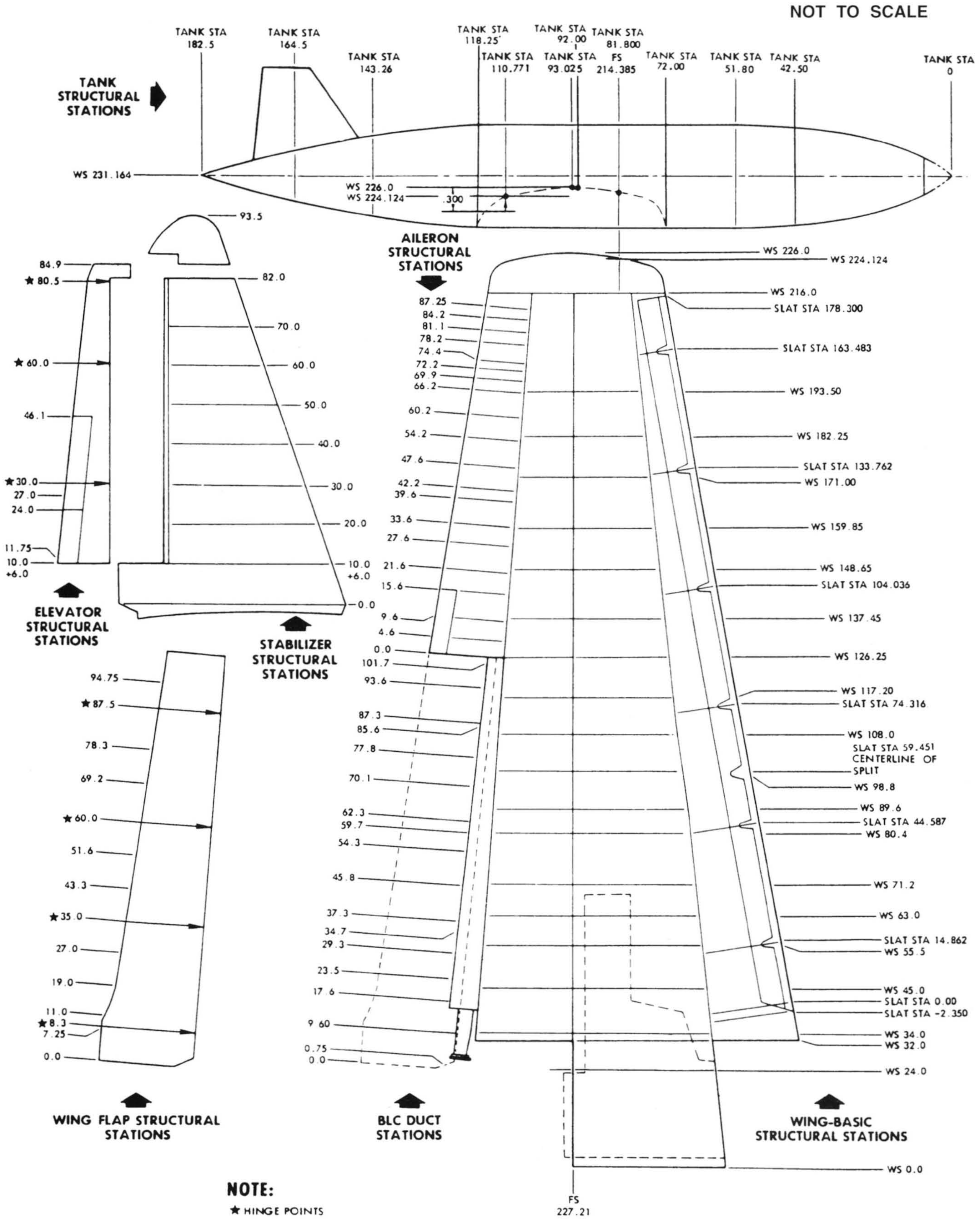
Below, leading edge stall inhibitor. (Doug Slowiak)



NOTE

★ HINGE POINTS

WING STATIONS DIAGRAMS

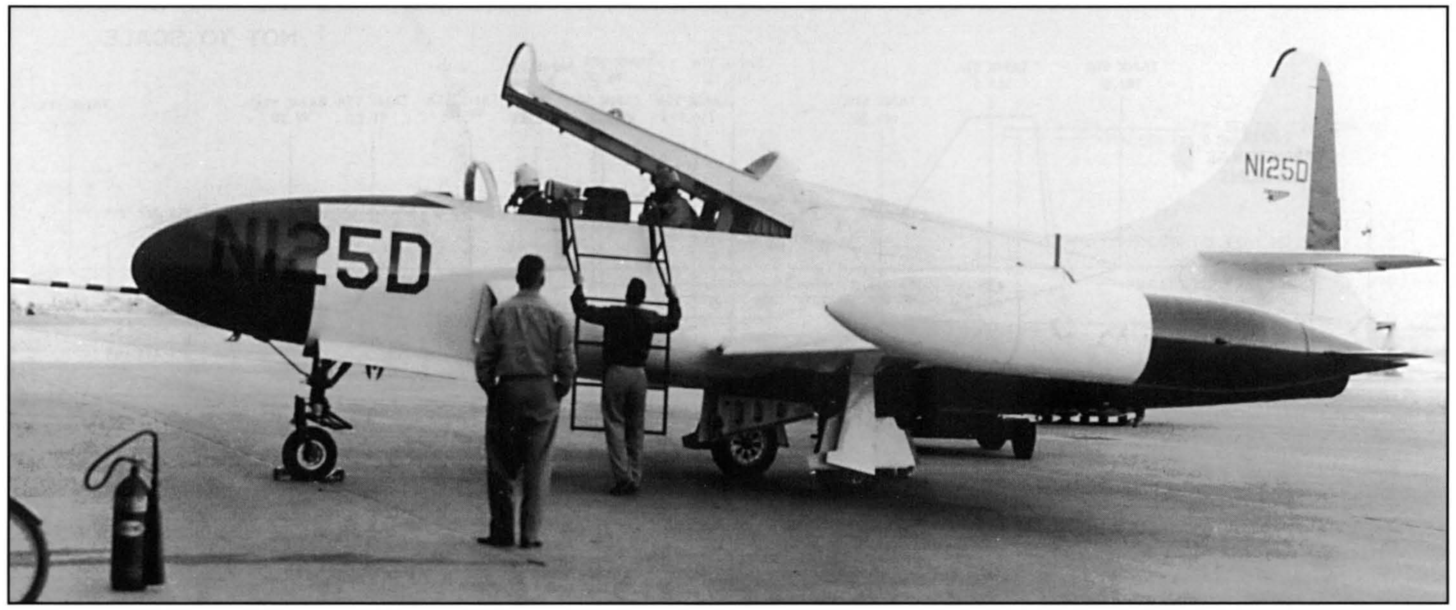


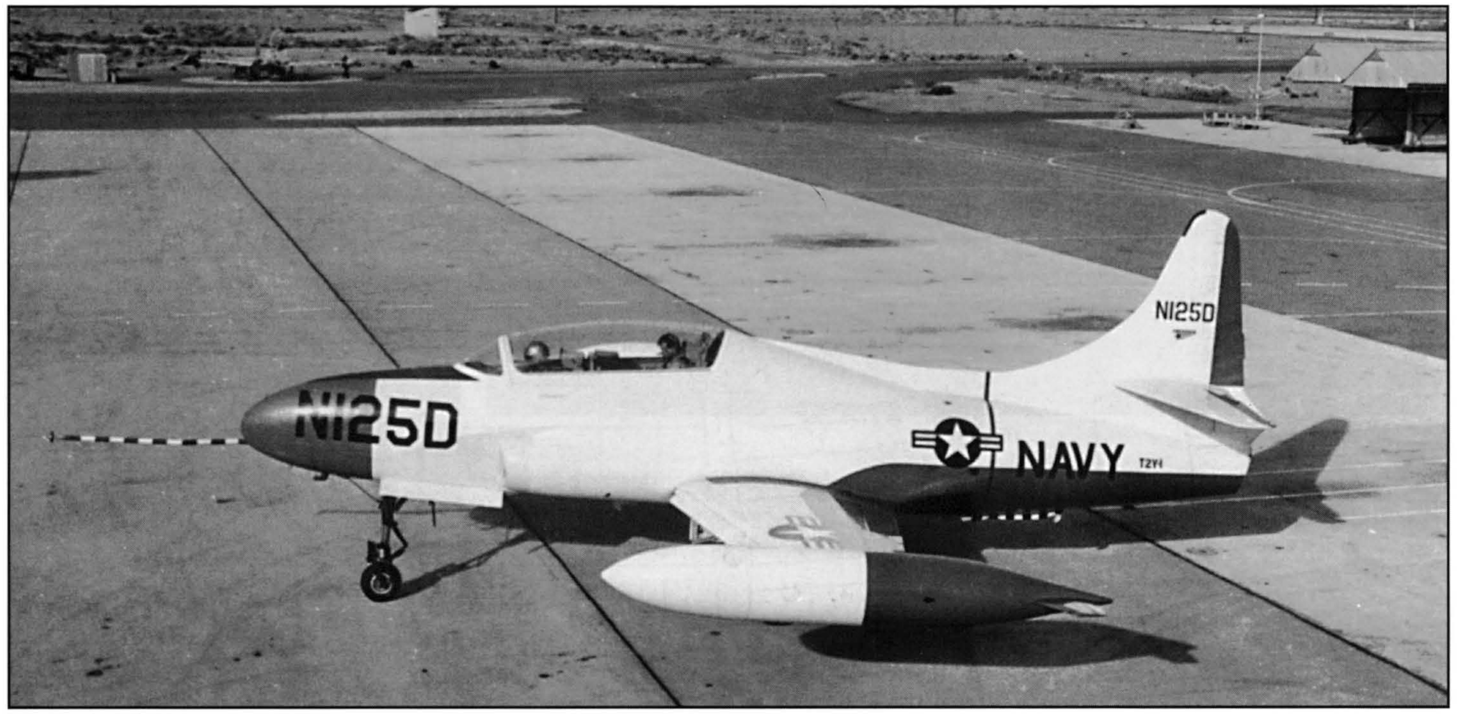
NOTE:

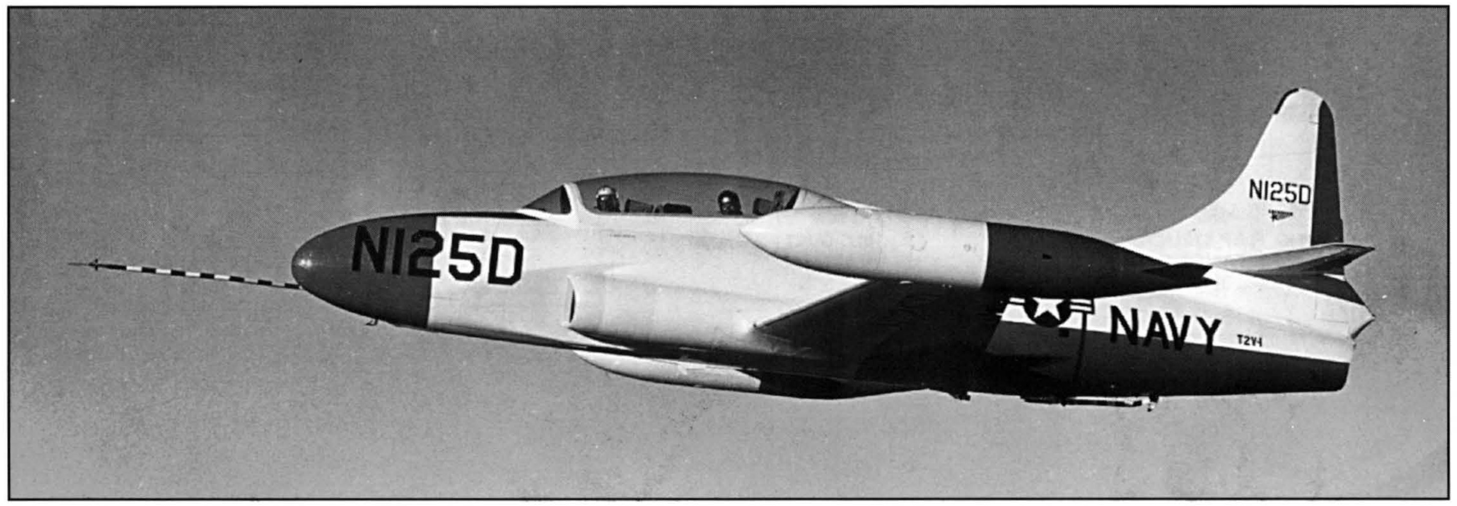
★ HINGE POINTS

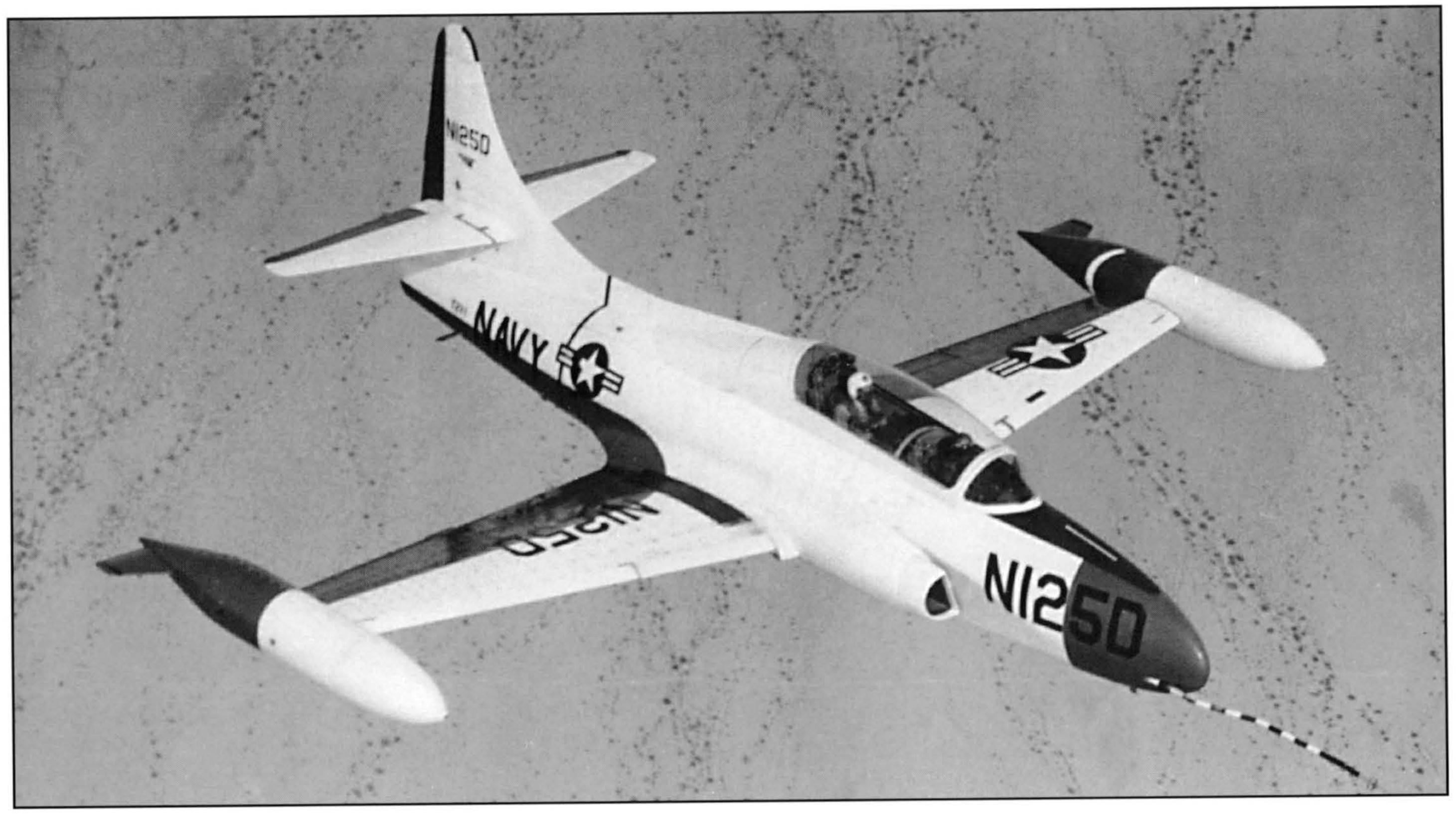
WING AND TAIL OUTLINE ACCURATE

PROTOTYPE T2V-1 N125D FLIGHT TESTING

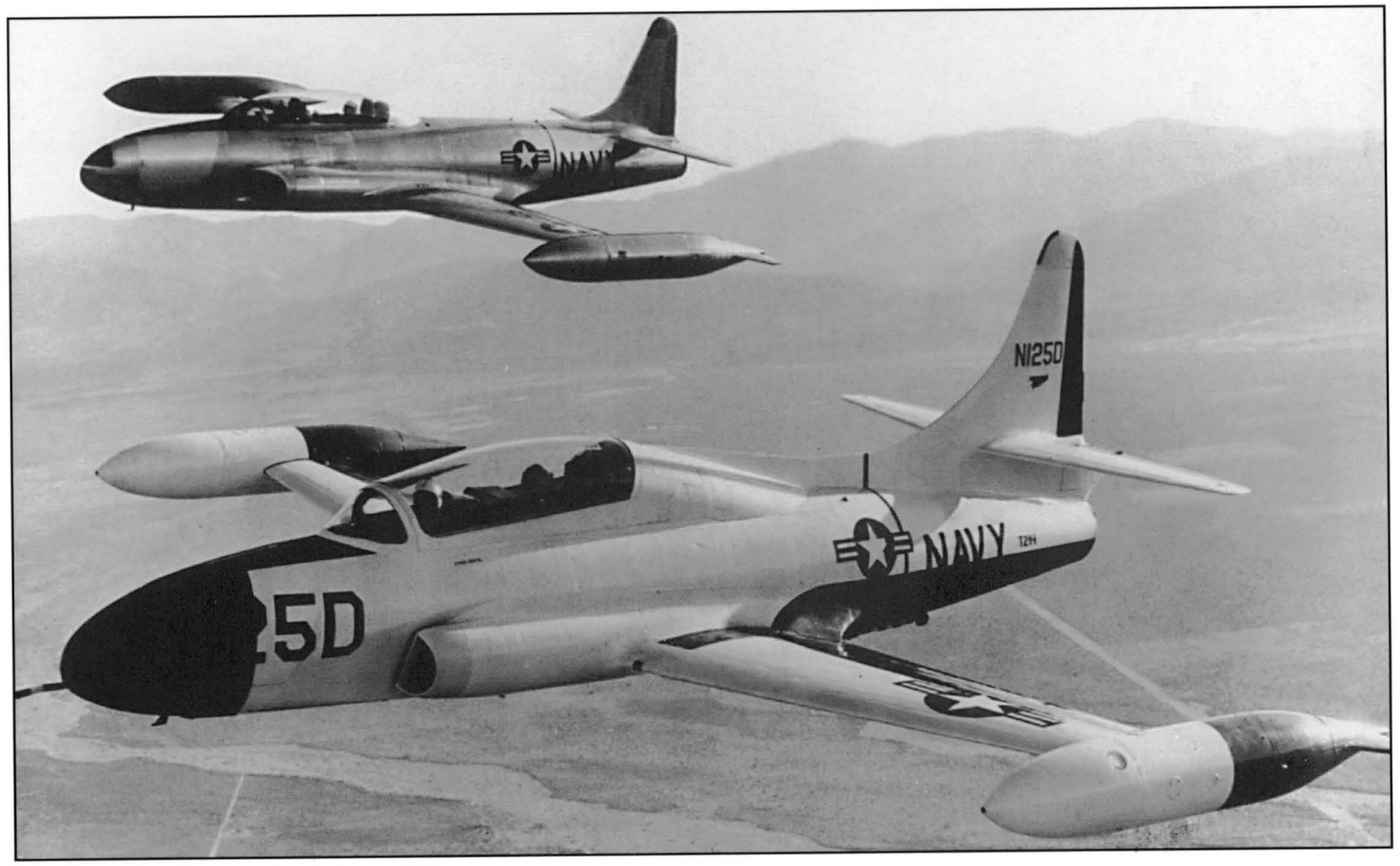




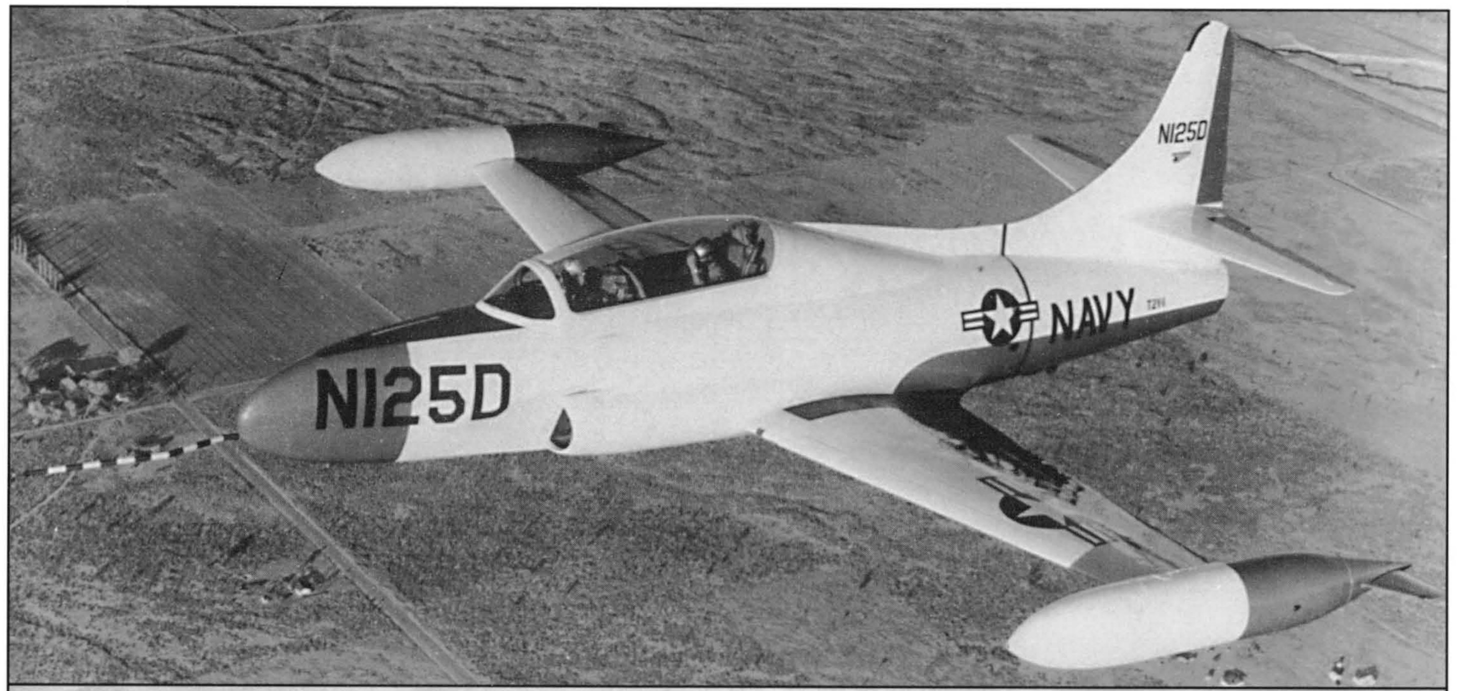


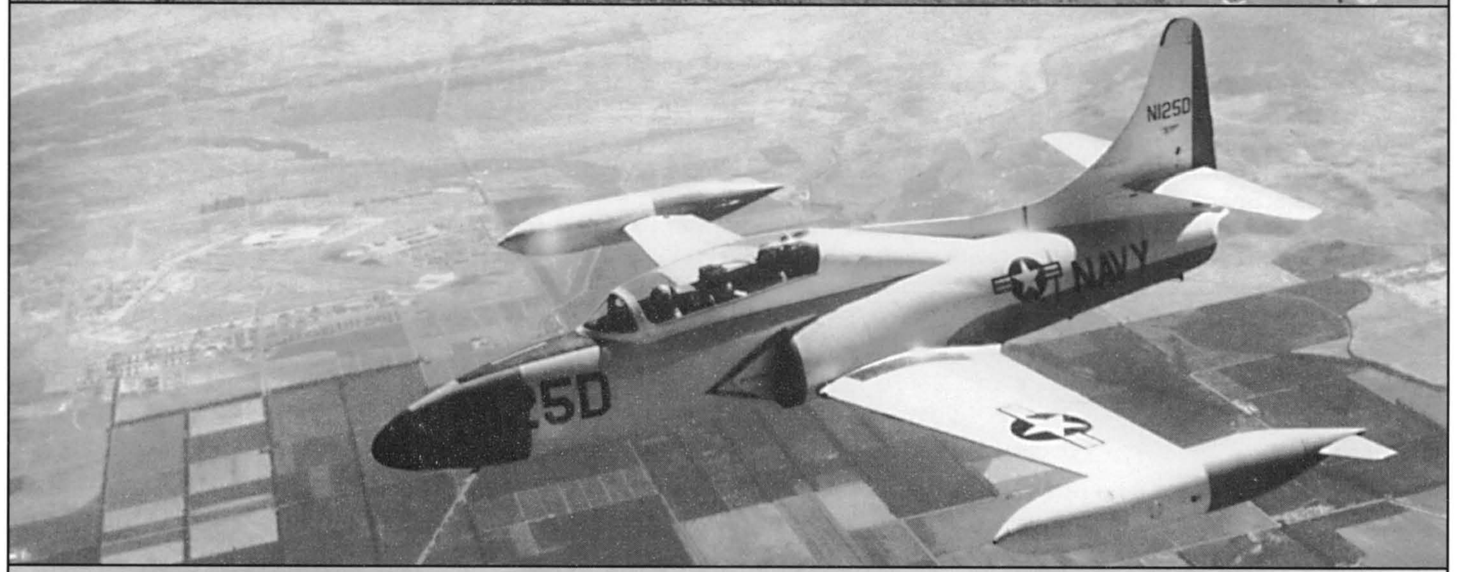


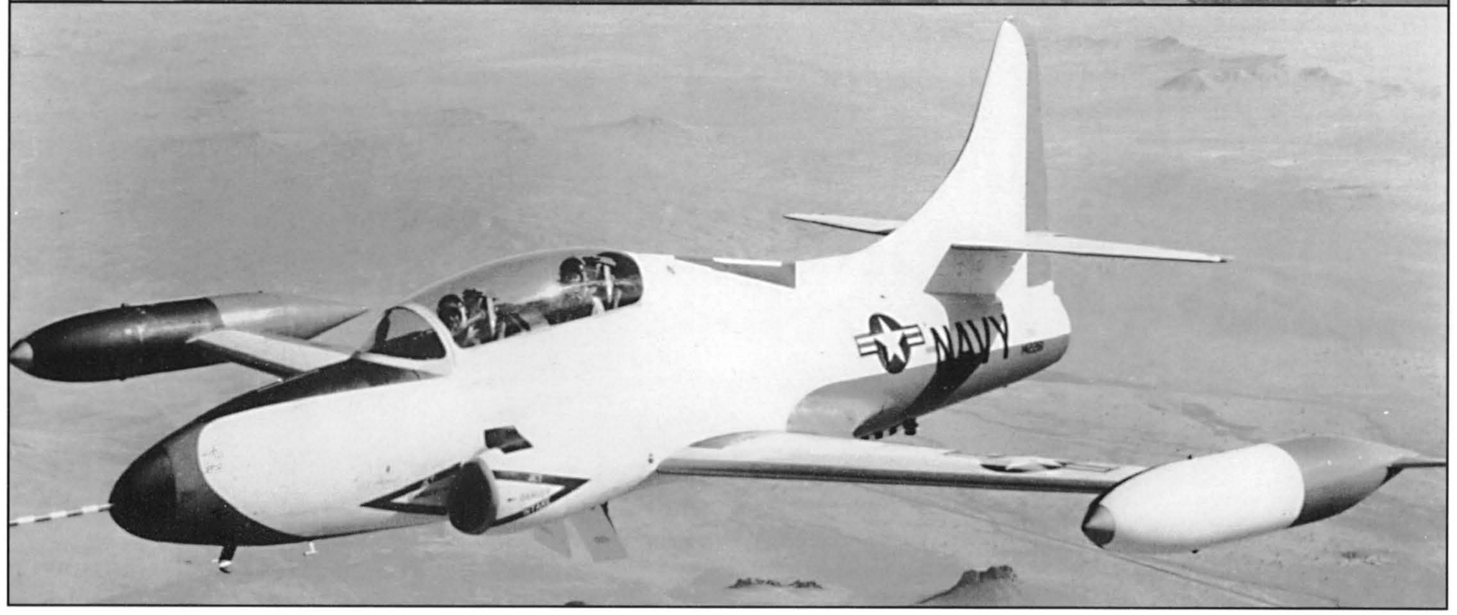
After the Air Force declined to purchase the Seastar, Lockheed concentrated on the Navy. At left top, a tailhook was added and N125D was repainted in Navy trainer colors of white and international red/orange. N125D prepares for a test flight from Lockheed's Palmdale Facility on 30 December 1954. Tony LeVier and Ray Crandall were at the controls. (via Pima Air & Space Museum) At left middle, good view of the newly added dorsal fin as N125D taxis out. Note the dual person boarding ladder. (via Pima Air & Space Museum) At left bottom, N125D in flight, note the long test probe fitted to the nose. (AAHS via Craig Kaston) Above, N125D over the Mojave Desert, note the location of the wing codes and the original intakes. (via Pima Air & Space Museum) Below, N125D in flight with a natural metal Navy TV-2 Thunderbird trainer on 11 April 1955. (USN)



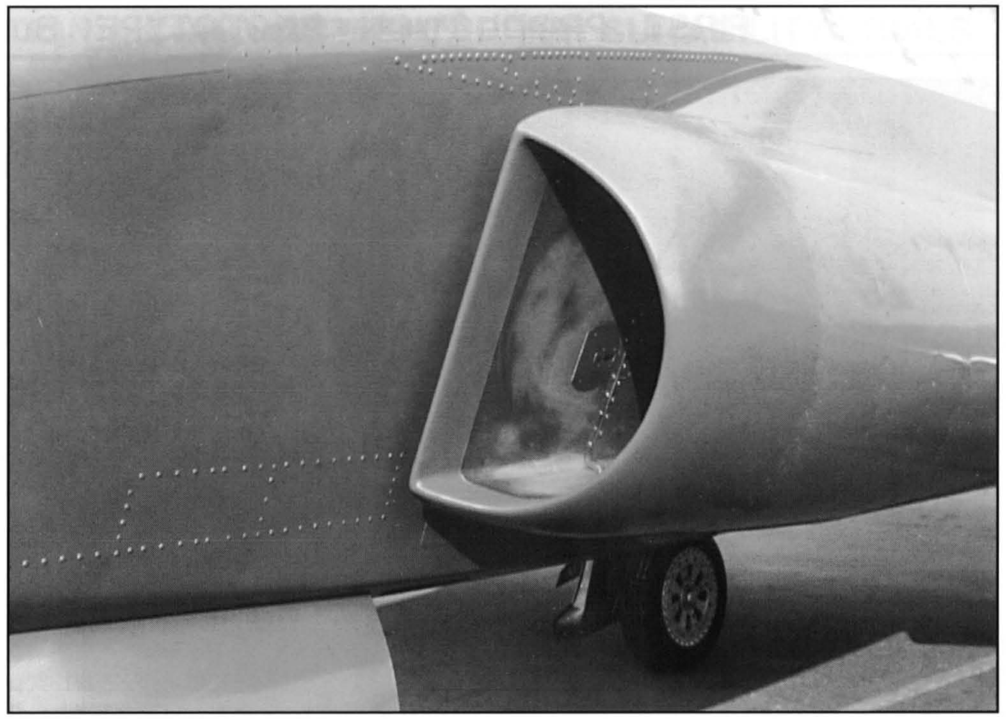
INTAKE DEVELOPMENT

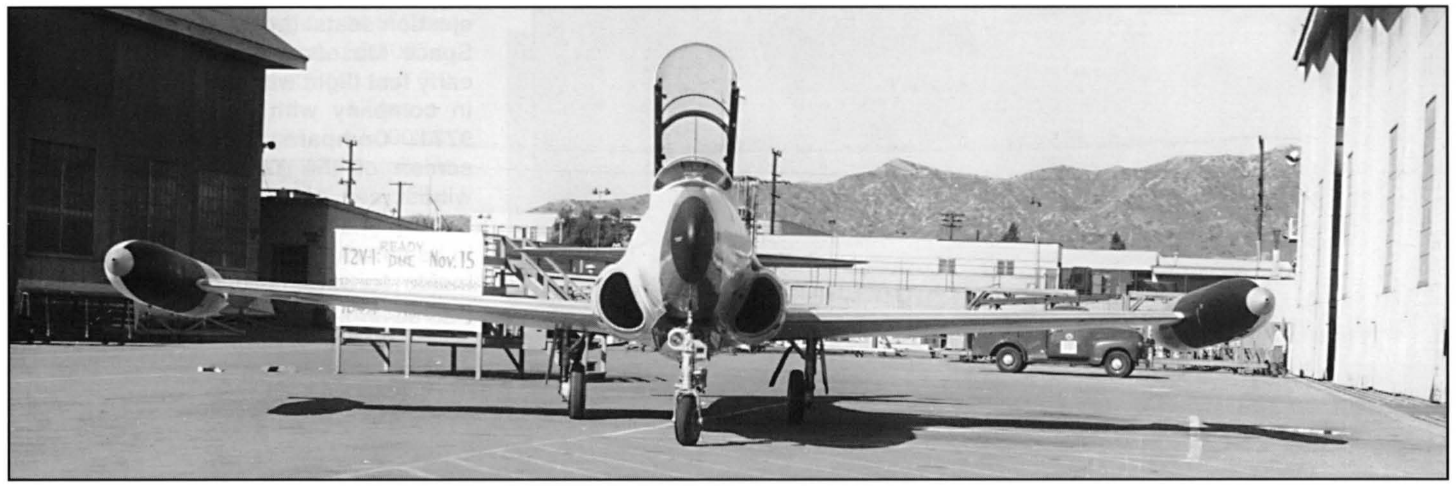


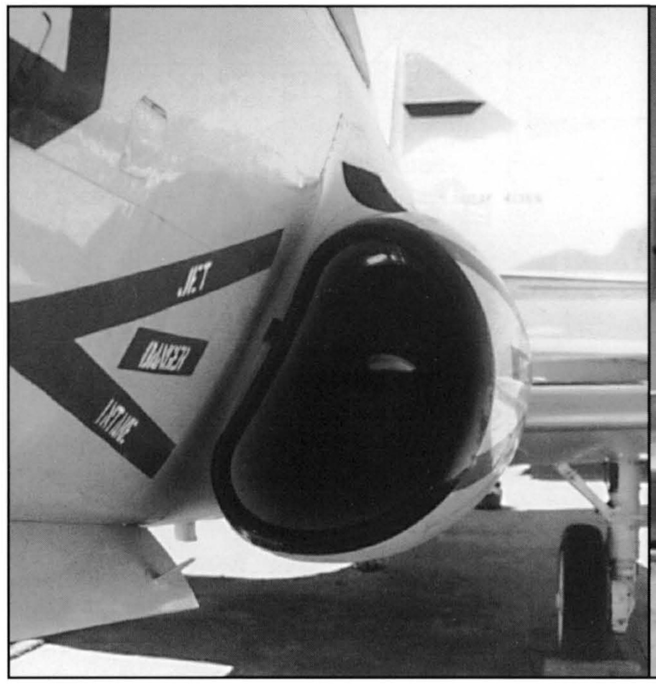


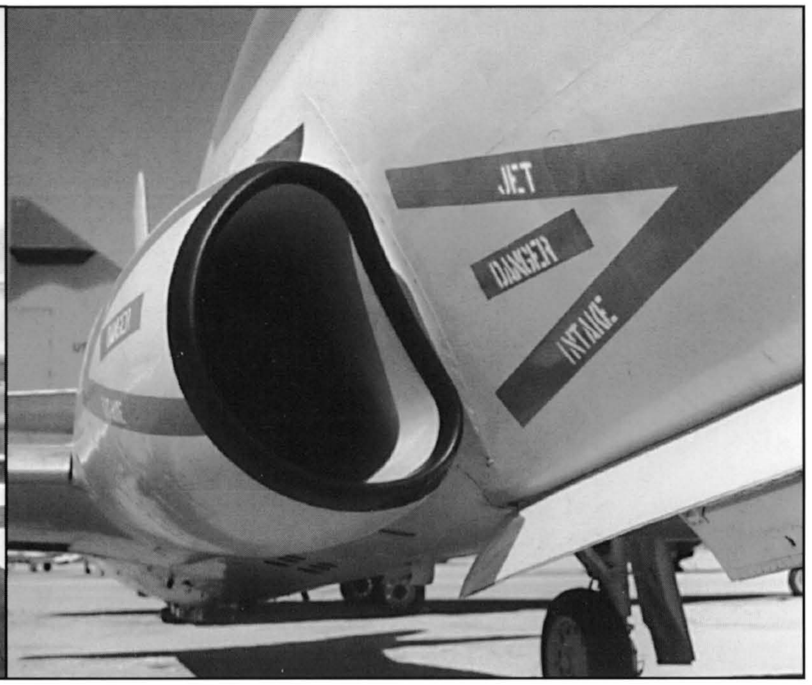


At left (via Craig Kaston) and at right (Lockheed), the original intakes as installed on N125D were found to be inadequate. At left middle, a quick fix was tried on N125D by moving the intake lip aft to the wing's leading edge and adding a splitter plate. This move allowed for a far greater volume of air to enter the engine due to the increased diameter of the duct at that section. However, just the increase in air volume alone did not completely solve the intake duct problems. (via Craig Kaston) At left bottom, a preproduction T2V-1 with the final intake design used on the production aircraft. It had been moved forward to its original position, and was greatly enlarged to fix the previous problems. (Lockheed) Below, head-on view of the new intakes. (via Craig Kaston) Bottom, two close-up views of the production intakes. (Doug Slowiak)

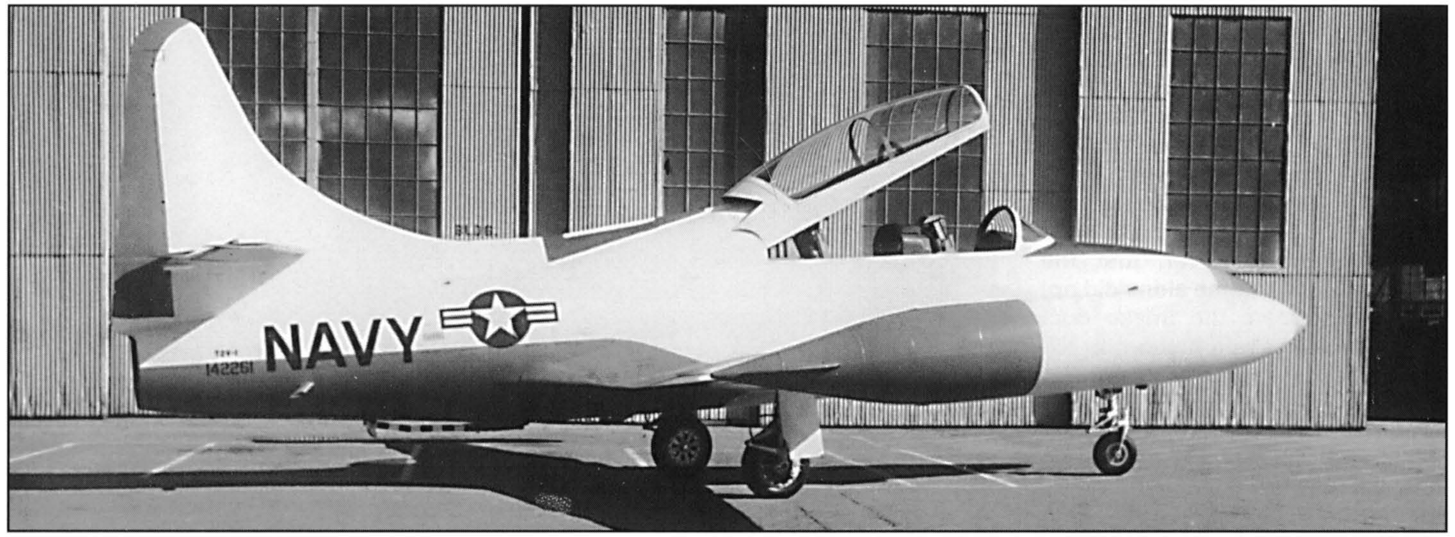


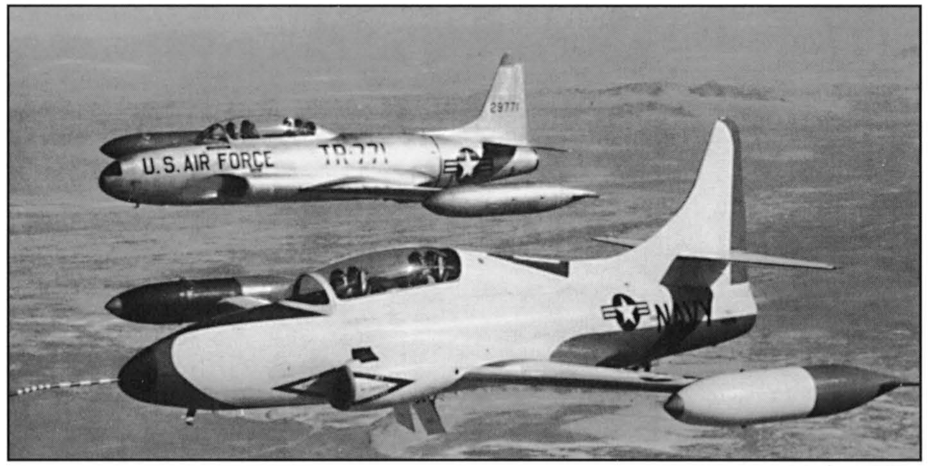




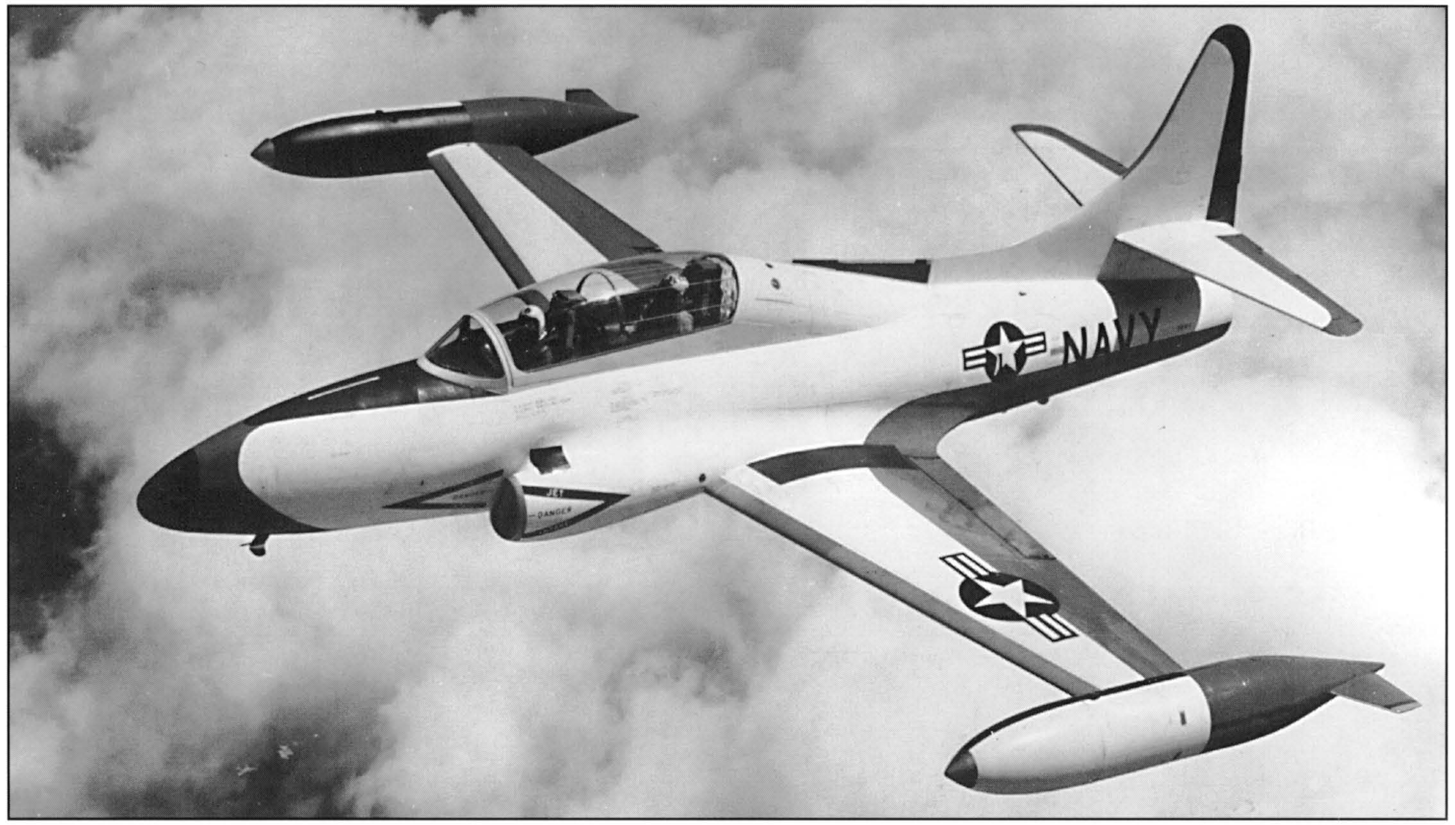


FIRST PRODUCTION PROTOTYPE BuNo 142261





Above, rollout at Lockheed of the first production prototype of the T2V-1 carrier trainer, BuNo 142261. The early Seastars were equipped with Lockheed designed ejection seats. (Lockheed via Pima Air & Space Museum) At left, 142261 on an early test flight with nose probe installed in company with Air Force T-33A, 52-9771. Compare the unframed windscreen of the T2V-1 with the framed windscreen of the T-33A/B. (Lockheed) Below, 142261 over Southern California in its colorful white and red scheme. The inside forward drop tanks were black. (Lockheed)



PRELIMINARY EVALUATION & CONTRACTOR CARRIER SUITABILITY TRIALS

PRELIMINARY EVALUATION

The carrier suitability aircraft chosen for the 60 day Preliminary Evaluation Phase of the Navy's Service Acceptance Trials was BuNo 142267. Before commencing these tests, 267 had its tailpipe shortened 6 inches for tail low landing clearence. In addition, a rubber tail bumper added as well as ballast to better simulate carrier operational weights.

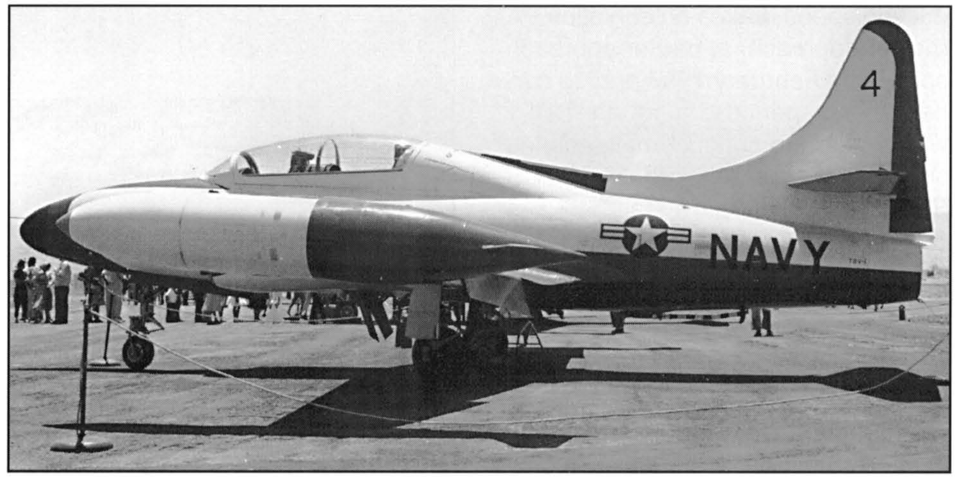
Testing began on 29 October 1956 and included 46 catapult launches (22 from the H-8 catapult and 24 from the TC-7 catapult), and 73 arrested landings (58 on Mk 5 Mod gear, 6 on Mk 5 Mod 1 gear and 9 on the Mk 7 Mod 1-3 gear). The following strength limits were observed:

1.) Design arresting weight 14,500lbs.
2.) Limit arr. hook drag load 66,500lbs.
3.) Limit arr. load factor at CG 5.0
4.) Limit sinking speed 17 fps
5.) Design catapult weight 17,000lbs.
6.) Limit catapulting hook load parallel to the deck 80,000lbs.
7.) Limit catapult load at CG 5.1

In addition the myriad minor discrepancies normally encountered in the preliminary phase, four major unacceptable items were noted. The boundary layer control system (BLC) was inadequate and was ordered to be redesigned. The other three areas were all associated with the arrested landing phase of the tests. These were: arresting hook bounce, airplane runout characteristics into the NATC double-engine reeved arresting gears, and airplane rebound characteristics immediately after touchdown. Excessive hook bounce contributed to the failure of fuselage station 344.8 as hook rotation rates were as high as 2000 degrees/second.

FINAL CARRIER TRIALS

While modifications were made to 142267 to correct problems identified during the Preliminary Phase, an uninstrumented airplane, BuNo 142266, was pressed into service to expedite shipboard tests. Furthermore, BuNo 142268 was used to evaluate the effectiveness of the pro-



Above, the fourth production T2V-1, BuNo 142264, assigned to Lockheed as seen at Palmdale Airport on 18 May 1956. (William Swisher) Below, 142267 conducting simulated carrier landing tests at NATC Patuxent River, Maryland, on 29 November 1956. (USN) Bottom, the Secretary of the Navy, Charles S. Thomas, is strapped into the back seat of T2V-1 142268 for an indoctrination flight in March 1957. (USN)

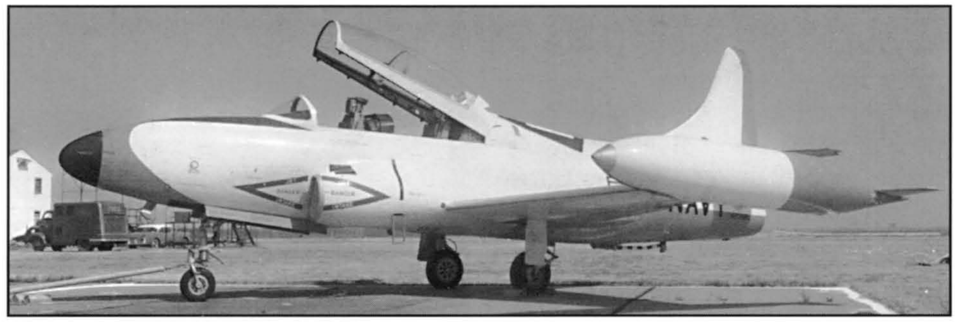
CVS-36 ANTIETAM & CVA-60 SARATOGA CARRIER SUITABILITY TRIALS

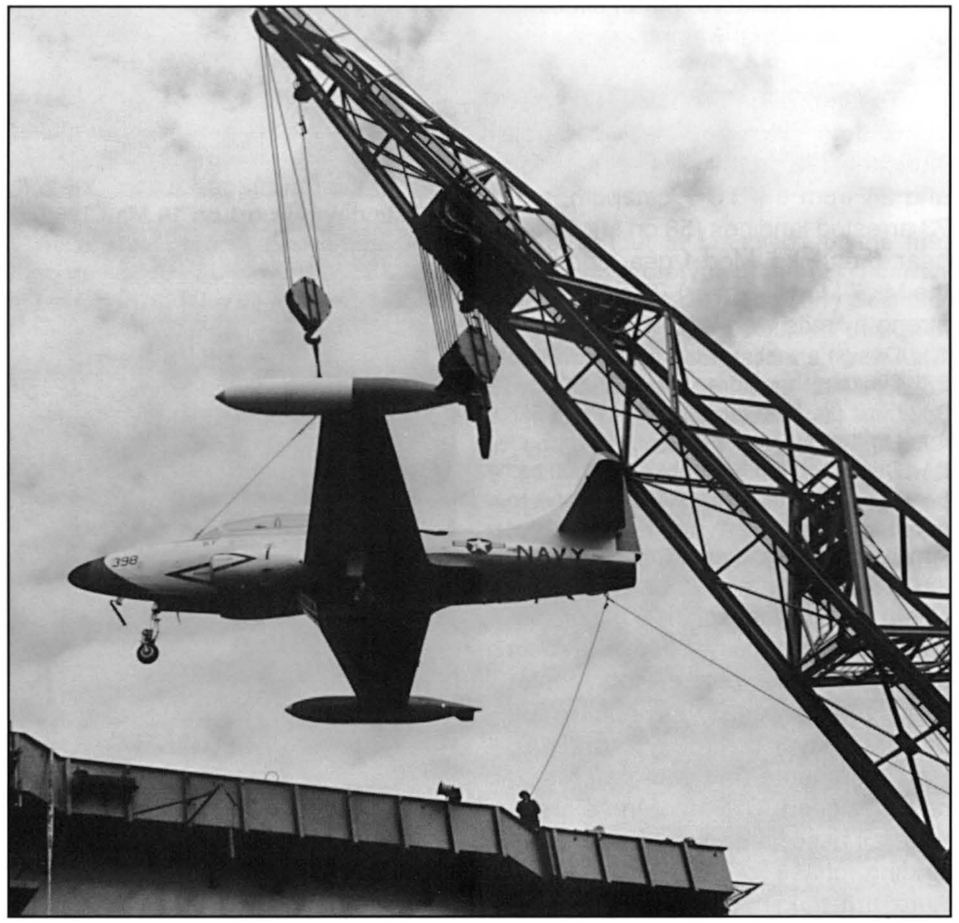
duction speed brakes on condition PA (power approach) at carrier approach speeds. In February 1957 prior to carrier at sea periods, a fourth T2V-1 was enlisted to conduct maintenance suitability trials aboard the USS Saratoga (CVA-60). This aircraft was BuNo 142398.

Shipboard carrier suitability trials were conducted aboard the USS Antietam (CVS-36) during the period 12-14 June 1957, and aboard the USS Saratoga (CVA-60) from 25-28 June 1957. The tests included 44 H4B and 14 C-7 catapult launches, 44 arrested landings into the Mk 5 Mod 6 gear, and 12 arrested landings into the Mk 7 Mod 1-3 gear. Night operations, consisting of 3 catapult launches and 13 landings (3 arrested) were conducted. The landing approach and wave-off characteristics were evaluated using both the LSO and the mirror landing system. A power-on, no-flare landing technique was used for all landings.

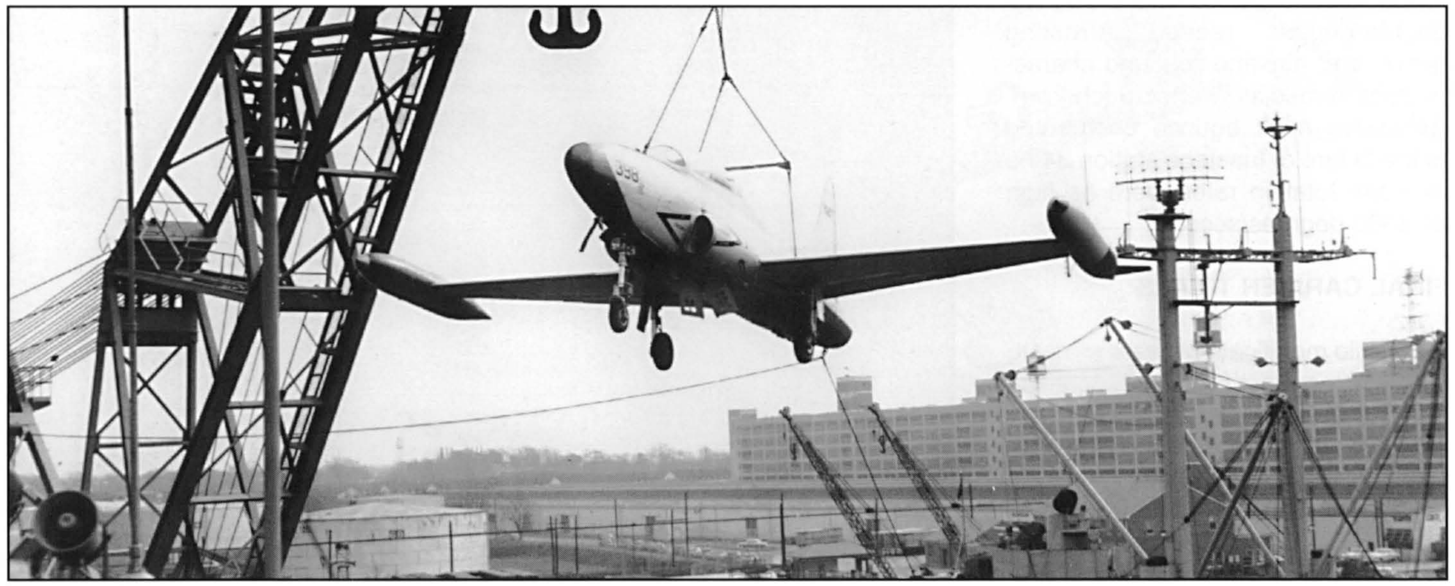
Results of the tests concluded that the T2V-1 aircraft was cleared for all day and night carrier operations and that the unsatisfactory hook bounce, airplane runout and rebound characteristics had been corrected. The boundary layer control system safety tell-tale light failed to provide positive information except in one condition. Lockheed was told to design the control valve to prevent an asymmetric BLC deployment condition if a valve malfunction should occur.

Deck handling characteristics were deemed satisfactory for both day and night operations with the exception of oversize gear tiedown rings which were too thick to accommodate standard hurricane tiedown fittings. However, careful spotting was

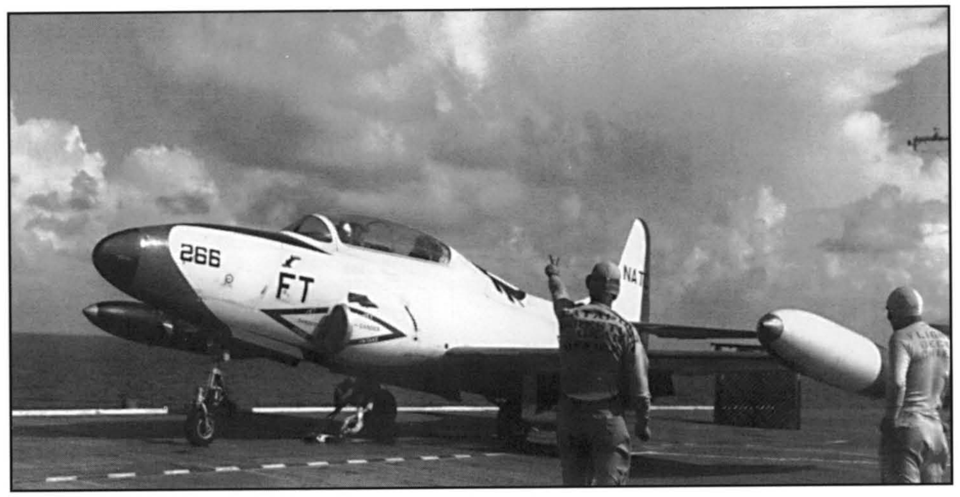


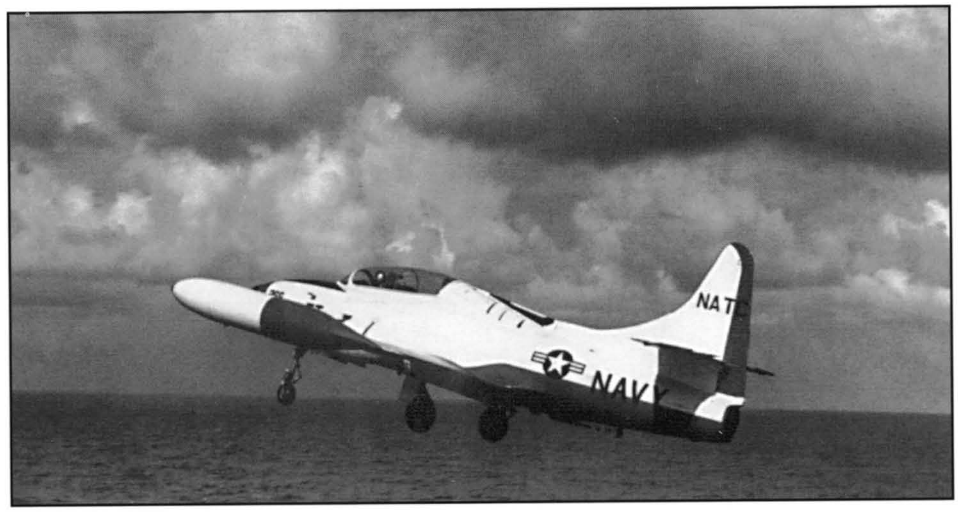


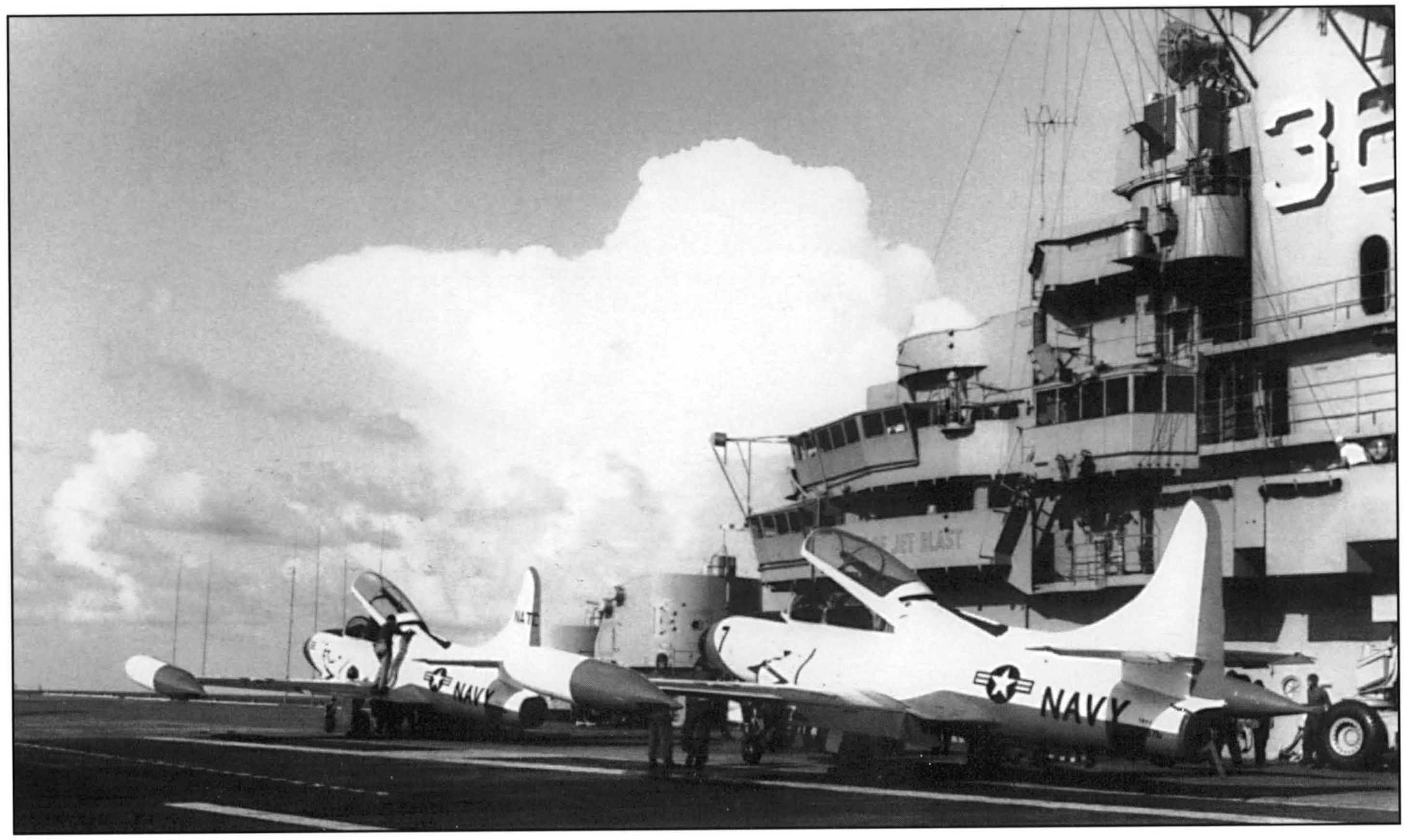
At right top, T2V-1 142398 prior to participating in carrier maintenance suitability aboard the USS Saratoga in February 1957. At right and below, 142398 is hoisted aboard the Saratoga for maintenance tests. (USN)

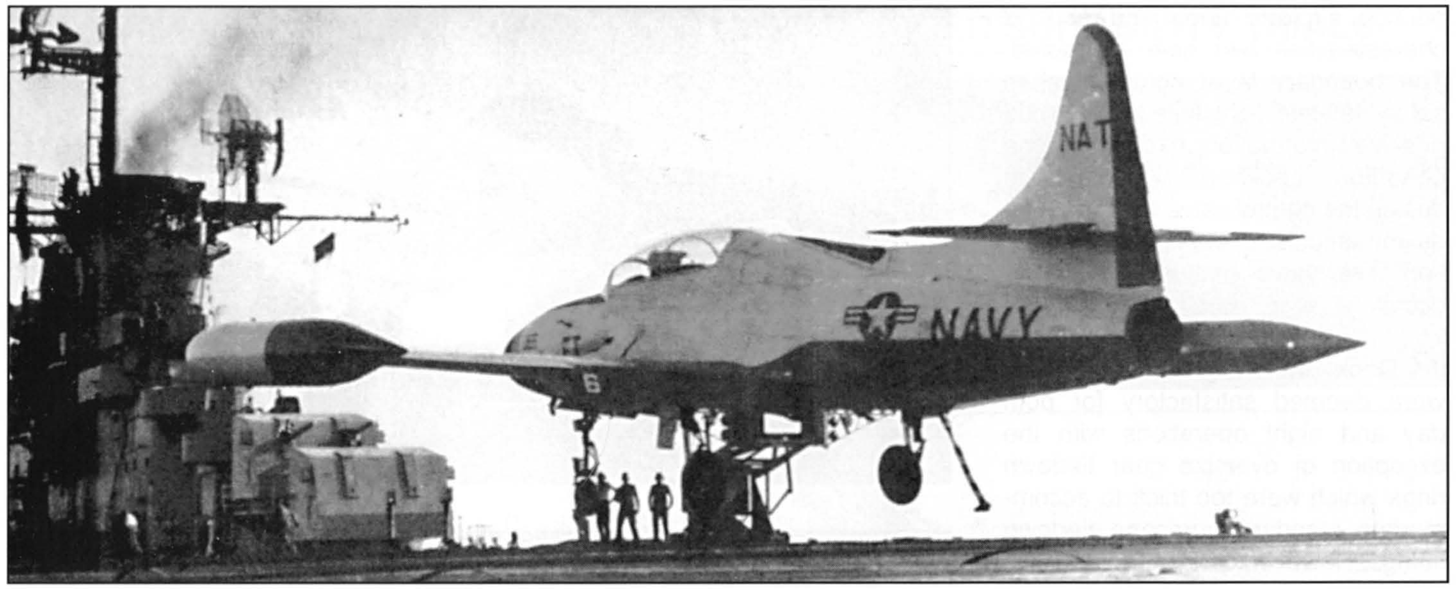


At right top, Flight Test (FT) T2V-1 142266 prepares for launch from the USS Antietam (CVS-36) in June 1957. At right, 142266 leaves the bow of CVS-36. Below, 142267 in the foreground with number 7 on the nose had its tailpipe shortened 6.5" for these trials. 142266 is forward of 142267. Neither aircraft were equipped with production style fuselage speed brakes aft of the wing's trailing edge. (National Museum of Naval Aviation)



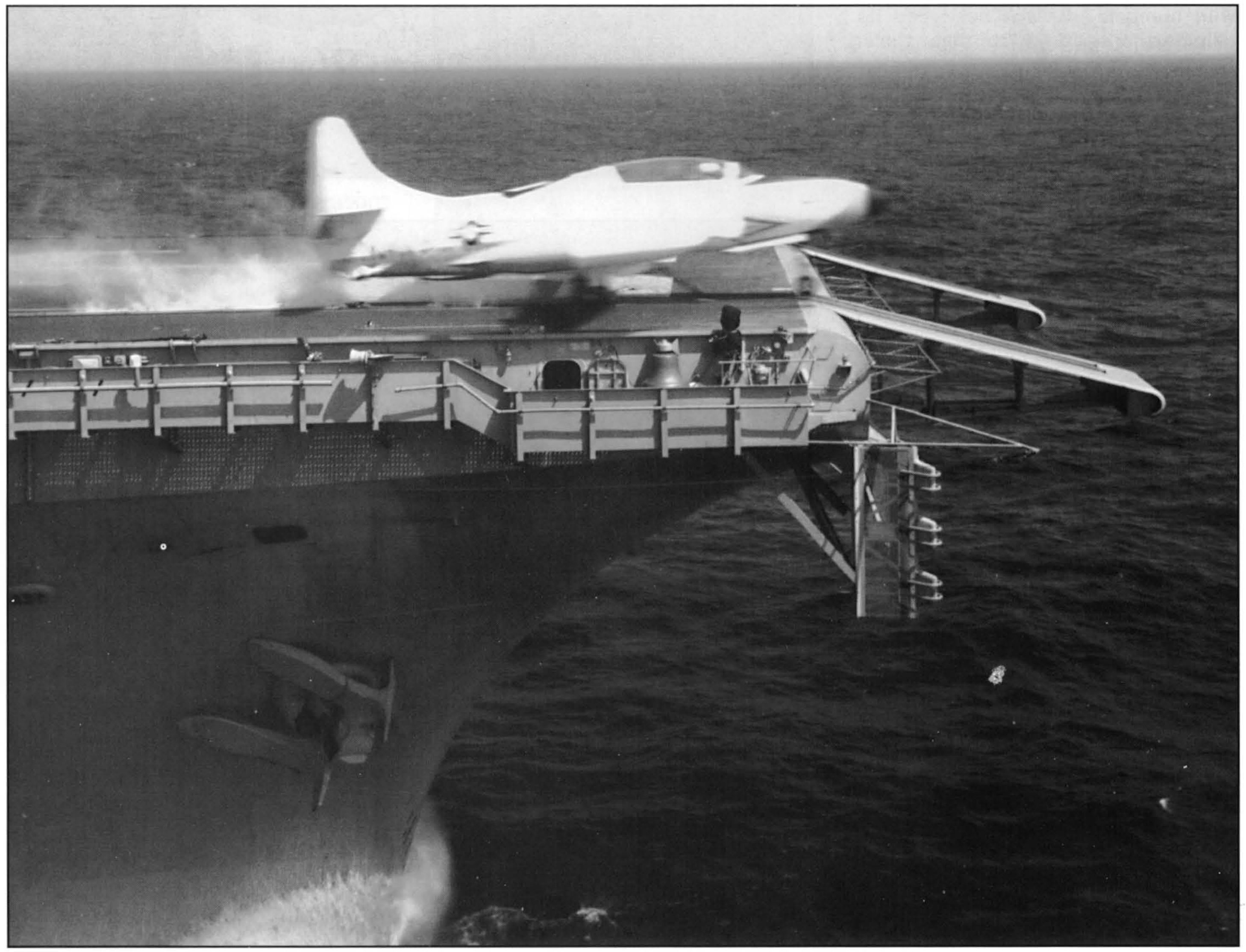




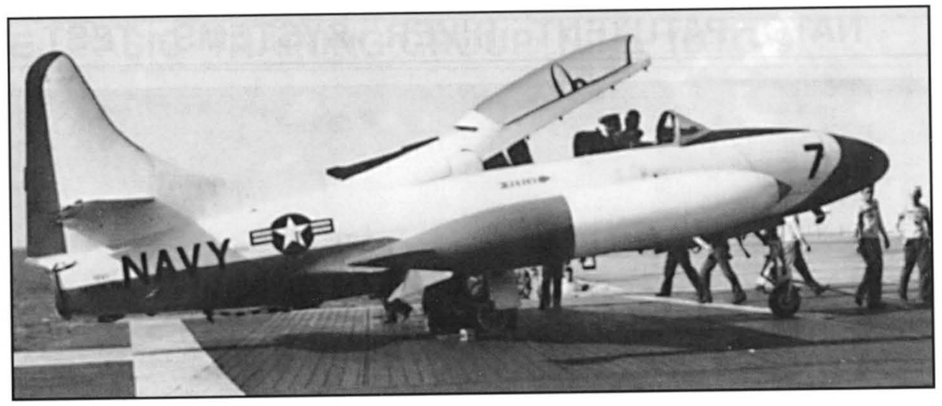


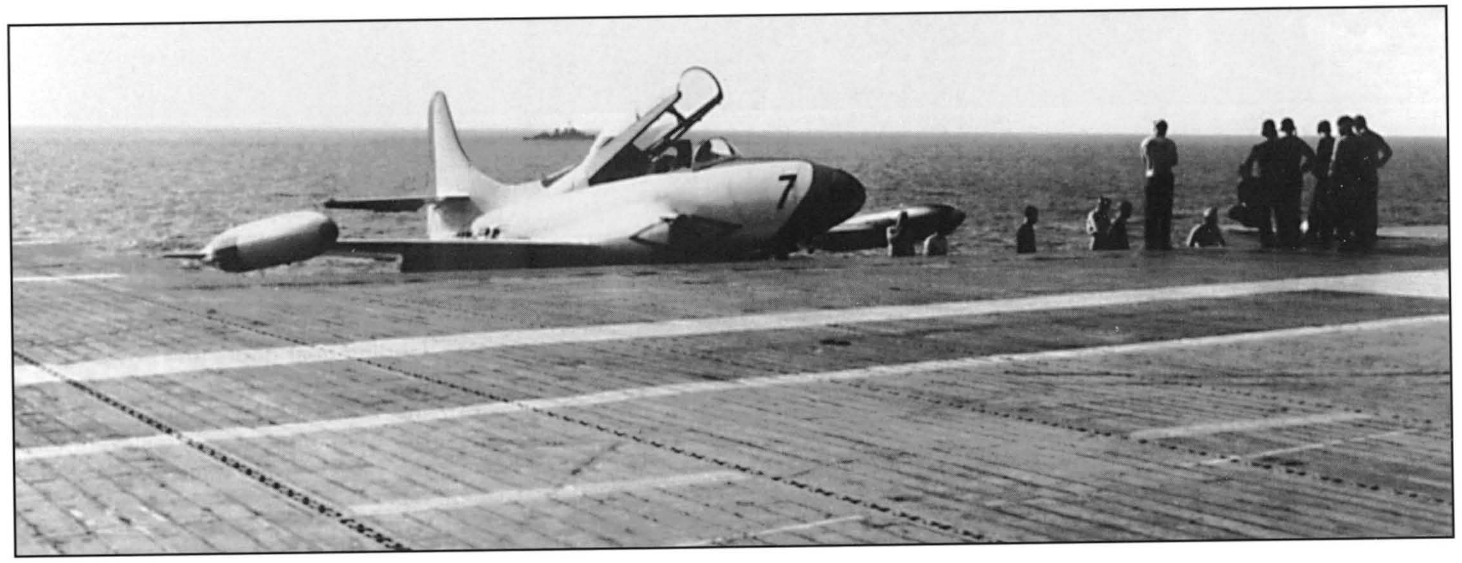
required on the centerline elevator of Antietam class carriers where only 6.5 inches wing tip clearance existed because the Seastar was not equipped with folding wings.

Prior to carrier suitability testing, it was established that the two forward finger type speed brakes as used on the T-33 and incorporated into the first T2V-1s were insufficient for carrier operations. The aircraft used during carrier trials did not have the production style fuselage side speed brakes, which were mounted just aft of the wing's trailing edge.

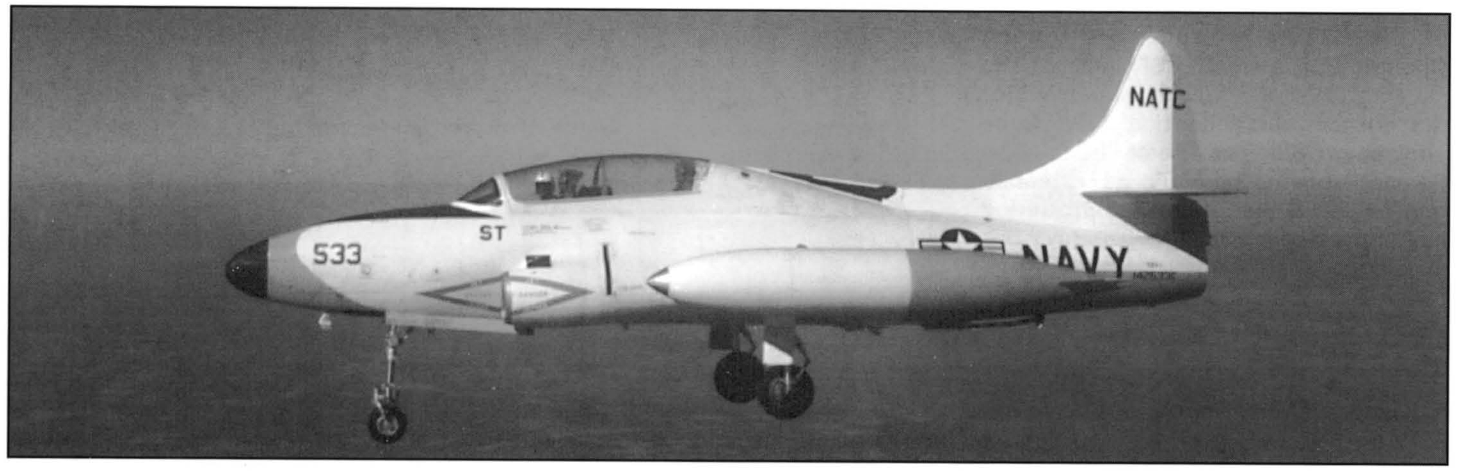


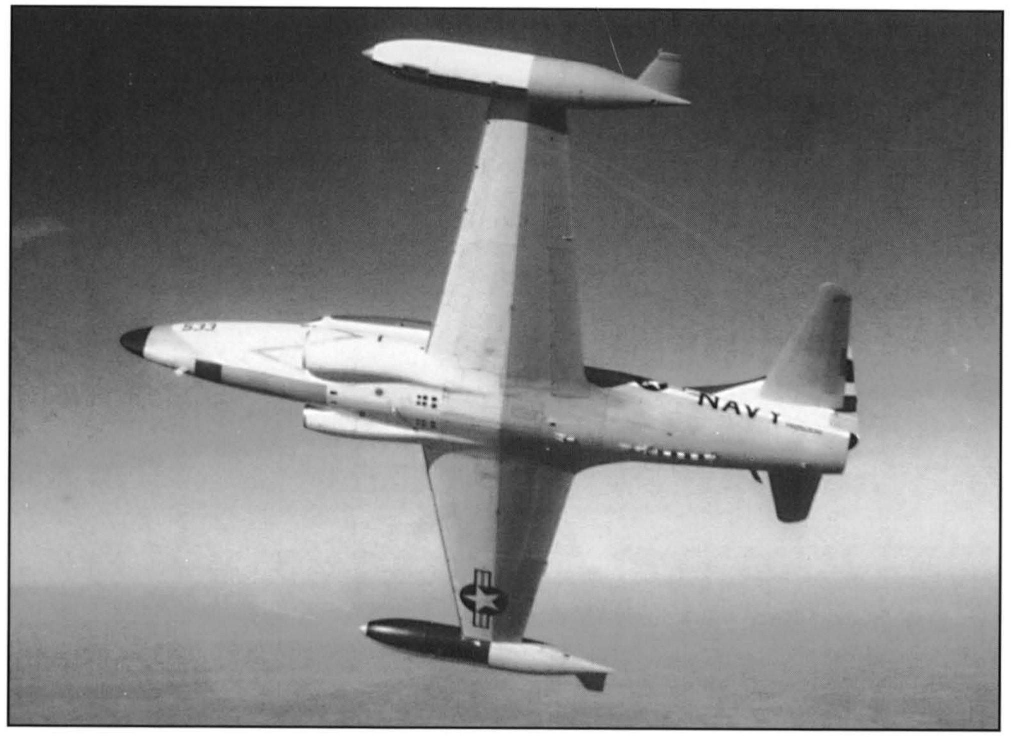
At left, 142266 lands on CVS-36 in June 1957, note flat landing attitude. (USN) At left bottom, 142267 launches off the bow of CVA-59 on 15 April 1958 during Operation Crosswind. (USN) At right, the seventh T2V-1 was fully instrumented for the carrier tests and had its tailpipe shortened 6.5" as seen here. The Seastar's nose strut could be extended to provide a better angle of attack during launch as seen here. (USN) Below, two views of 142667 on the deck edge elevator on CVS-36 in June 1957. (USN)



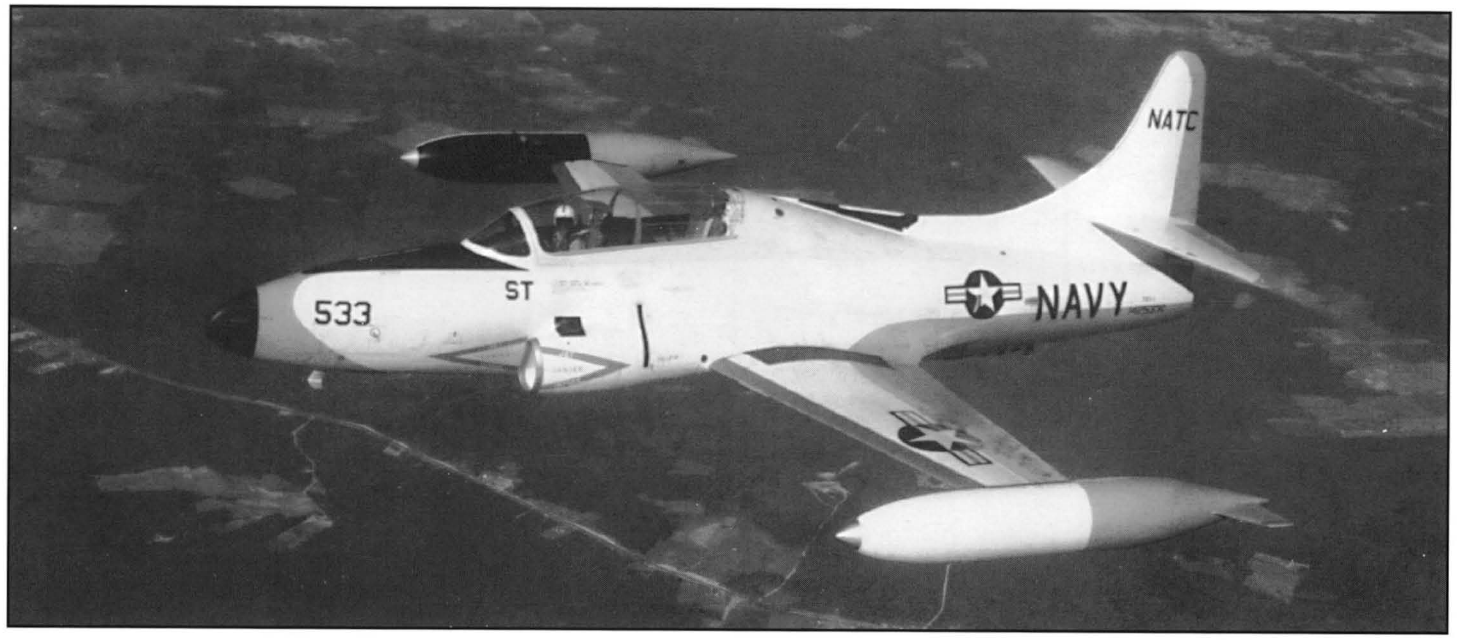


NATC PATUXENT RIVER SYSTEMS TEST AIRCRAFT BuNo142533

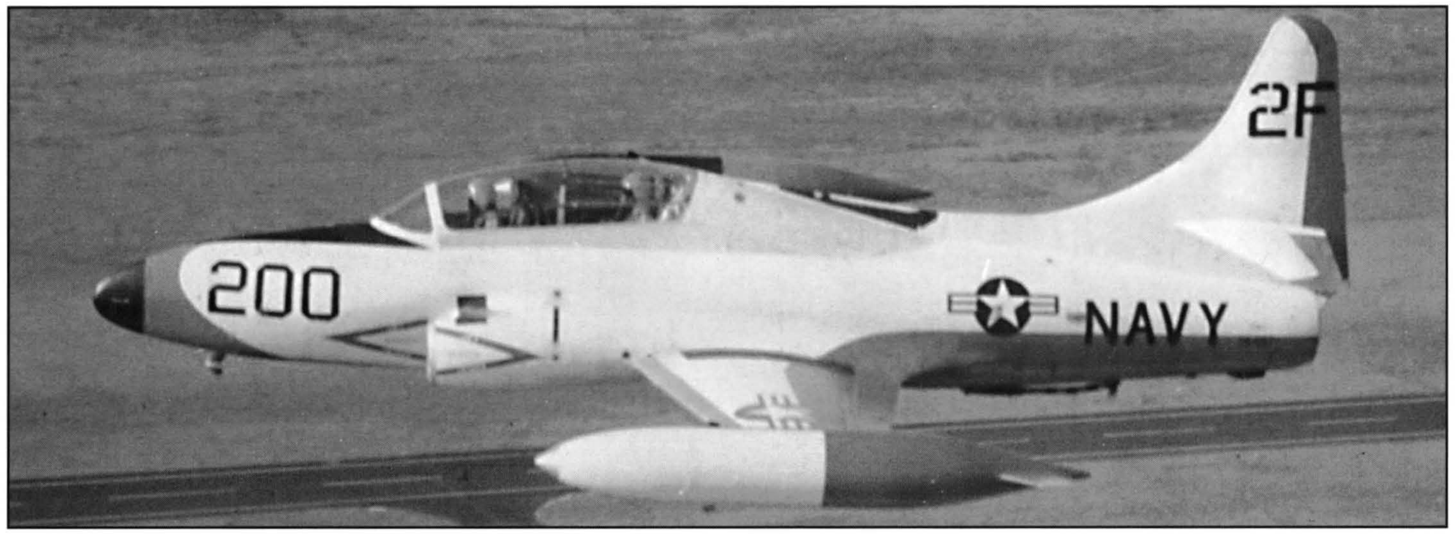




Three views of early T2V-1 in flight, which illustrate the early trainer markings applied to the Seastars. The aircraft were white with international orange trim. The belly photo shows the international orange flowing from the nose onto the nose landing gear doors and covering the aft half of the wings, tip tanks and the aft fuselage. The underside of the horizontal stabilizers were also orange even though the upper surfaces were white and orange. The aircraft had a black nose cap and inner forward tip tanks. Black was also used for the anti-glare panel and on the area of the dorsal fin aft of the cockpit. Additionally, the wing walk area was coated with a non-slip black paint. The leading edge of the wing and the tips of the tip tanks were natural metal. The early T2V-1s had natural metal landing gears as seen in the slow flight photo taken in December 1956 above. (USN)

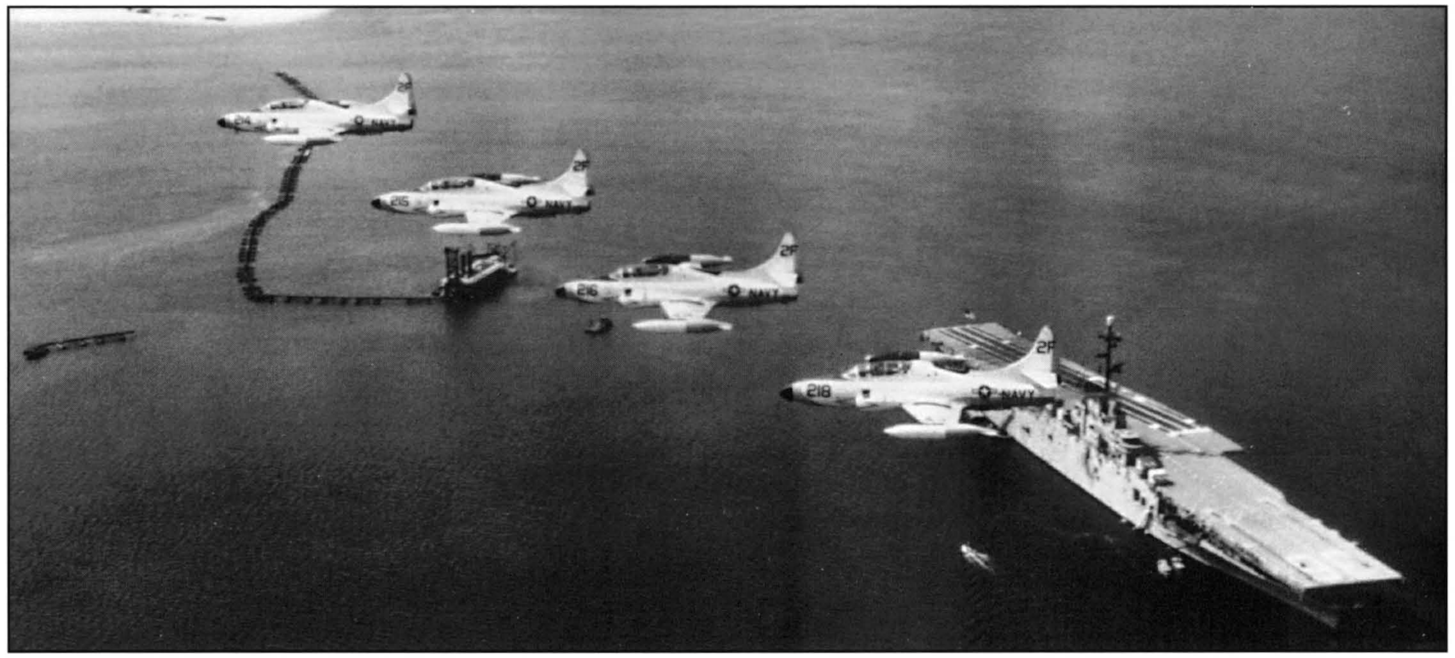


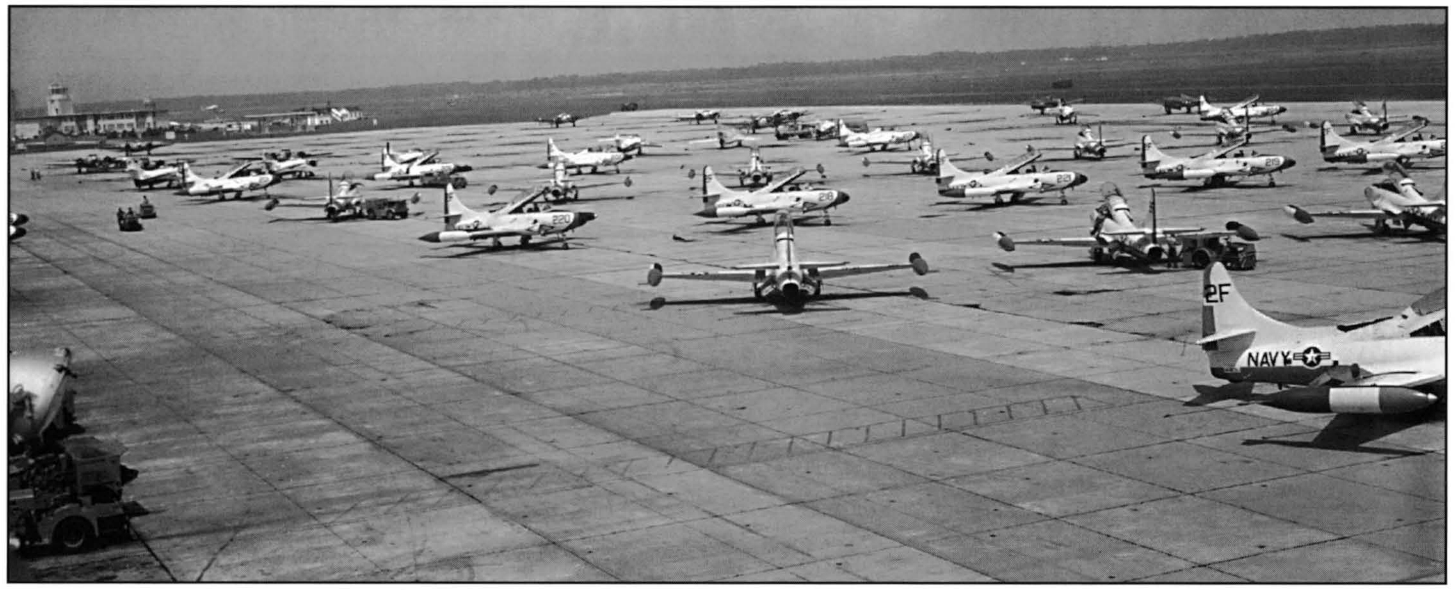
SQUADRON SERVICE, BASIC TRAINING GROUP NINE (BTG-9)



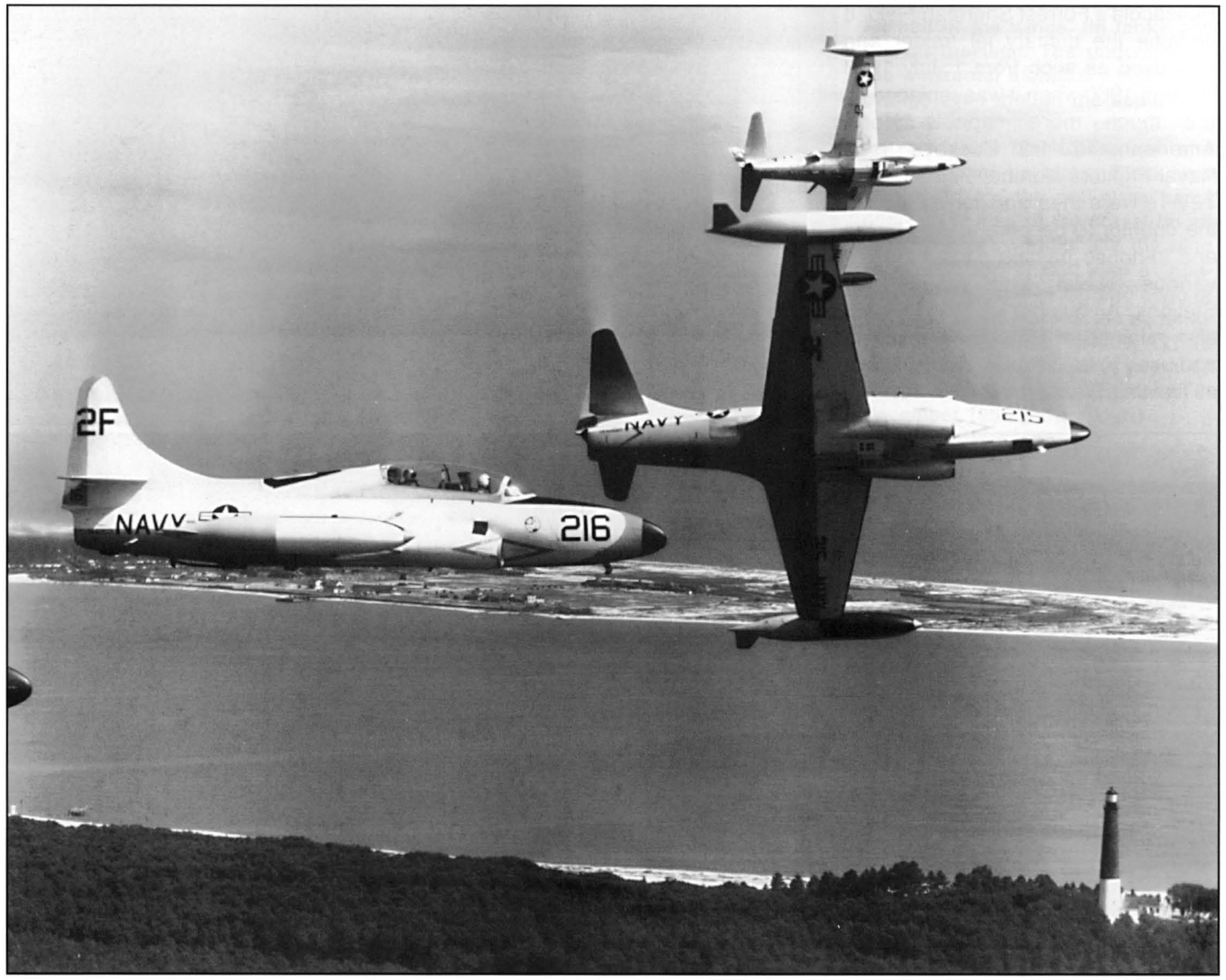
The Seastar spent very little time in squadron service. After being cleared for carrier operations, it was assigned to BTG-9 at NAS Pensacola's Forrest Sherman Field. It became the primary jet trainer and was used as such from 1 July 1958 through 1960 when it was replaced by the much more capable North American T2J-1/2 Buckeye (see Naval Fighters Number Fifteen). The T2V-1s were then transferred around the country to become station hacks and in-house training aircraft for the various Naval and Marine Air Stations. A number of T2V-1s were also retained at Mainside Pensacola and used to train Naval Flight Officers at Training Squadron Ten VT-10.

Above, BTG-9 Seastar passes over Forrest Sherman Field on 29 January 1959. (USN via Bob Lawson) Below, formation of four BTG-9 T2V-1s over Pensacola on 14 June 1959. (National Museum of Naval Aviation) Bottom, four BTG-9 T2V-1s overfly the USS Antietam (CVS-36) in Pensacola Bay on 14 June 1958. (NMNA)





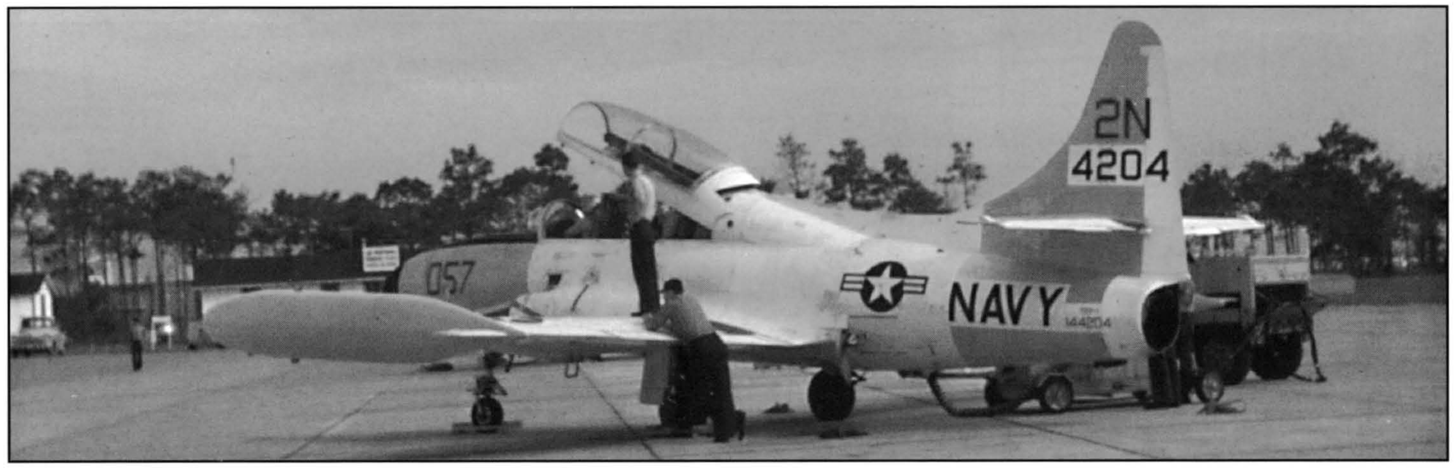
Above, BTG-9 line at NAS Pensacola, Florida, on 4 June 1959. Twenty-two Seastars were visible as well as seven TF-9 Cougar advanced jet trainers. (USN via Barry Miller) Below, BTG-9 Seastars break over Pensacola Bay on 14 June 1959. After commensing the break manuever, the lead T2V-1 has popped its fuselage-mounted speed brakes. Note the squadron's insignia on the forward fuselage of #216. (National Museum of Naval Aviation)

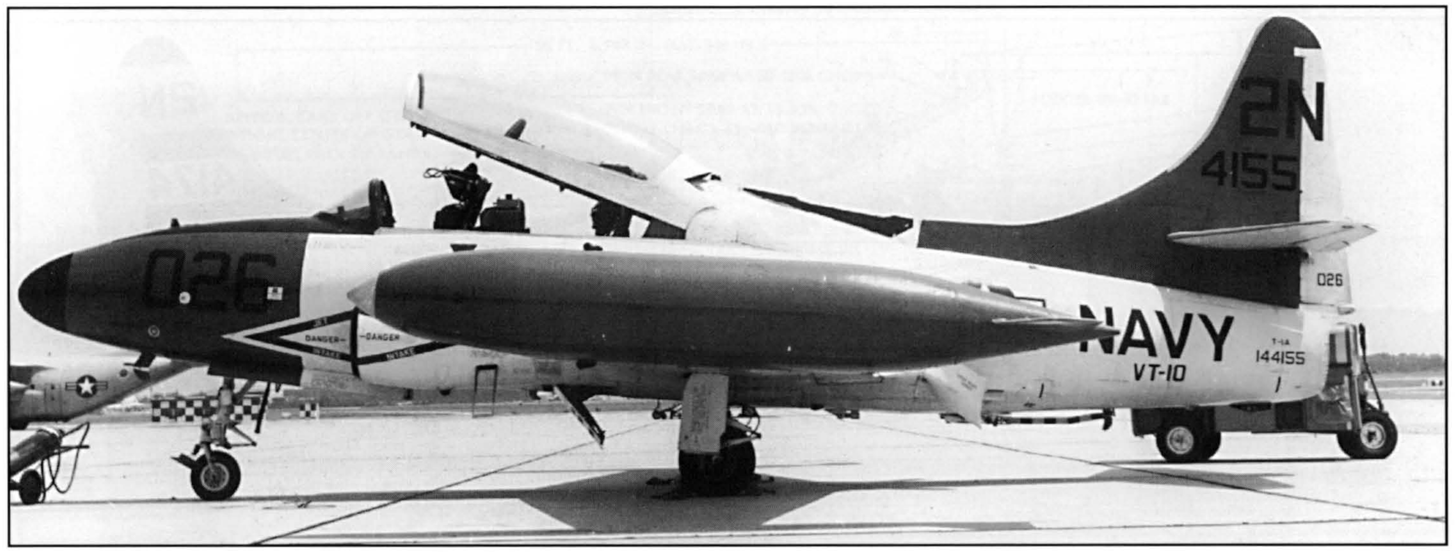


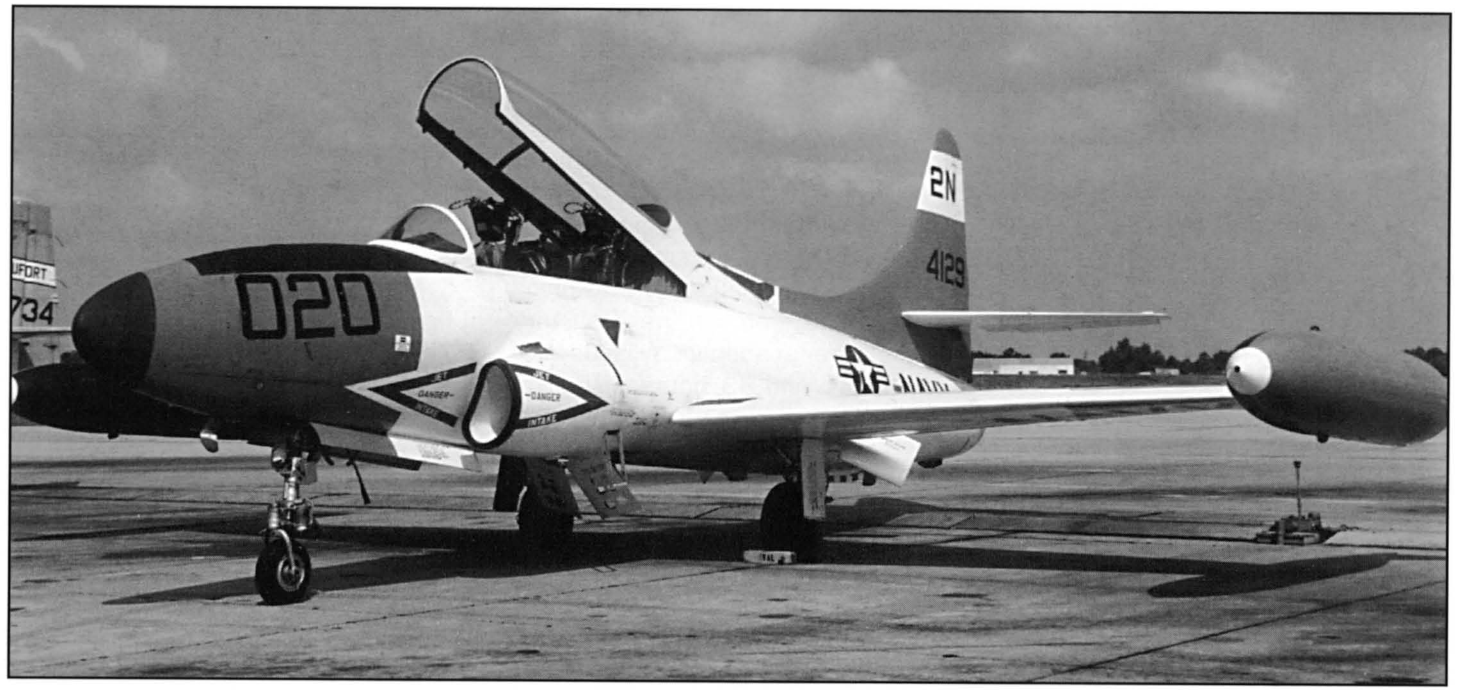
TRAINING SQUADRON TEN (VT-10)

VT-10 was established on 31 June 1960. It provides basic training for student Naval Flight Officers (NFO) and Air Intelligence Officers (AIO). Academic classes were arranged in three general categories: operations, navigation, and avionics. Toward the end of the Seastar's usage, the academic syllabus was 488 hours and 43 hours of in-flight training, 30 hours of which were spent in T-1As and T-29 training aircraft.

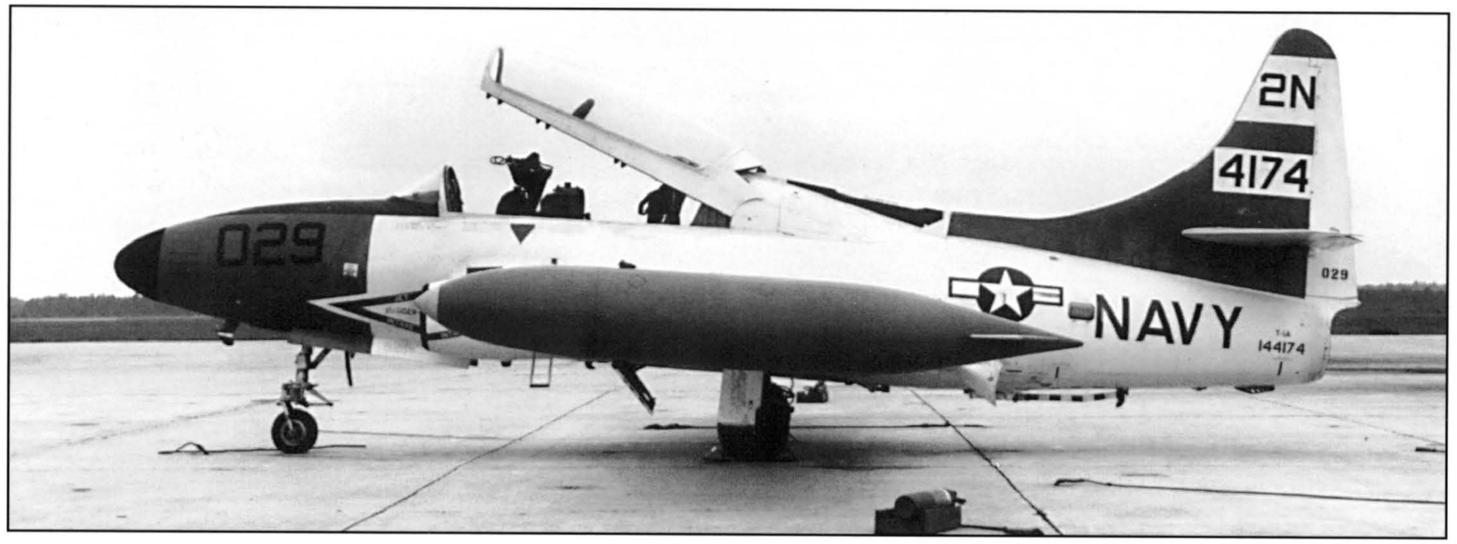
Below, late 1959 view of the T2V-1 flightline at Pensacola. (National Museum of Naval Aviation) Below middle, VT-10 T2V-1 144204 is prepared for a NFO training flight. The aircraft is trimmed in da-glo orange. (Stan Wyckoff) Bottom, VT-10 T-1A 144155 with red/orange trim in 1963. The normally white windscreen frame is black. The T2V-1/T-1A speed brakes would normally be found in the open position when parked on the ground for any length of time. (via Craig Kaston)



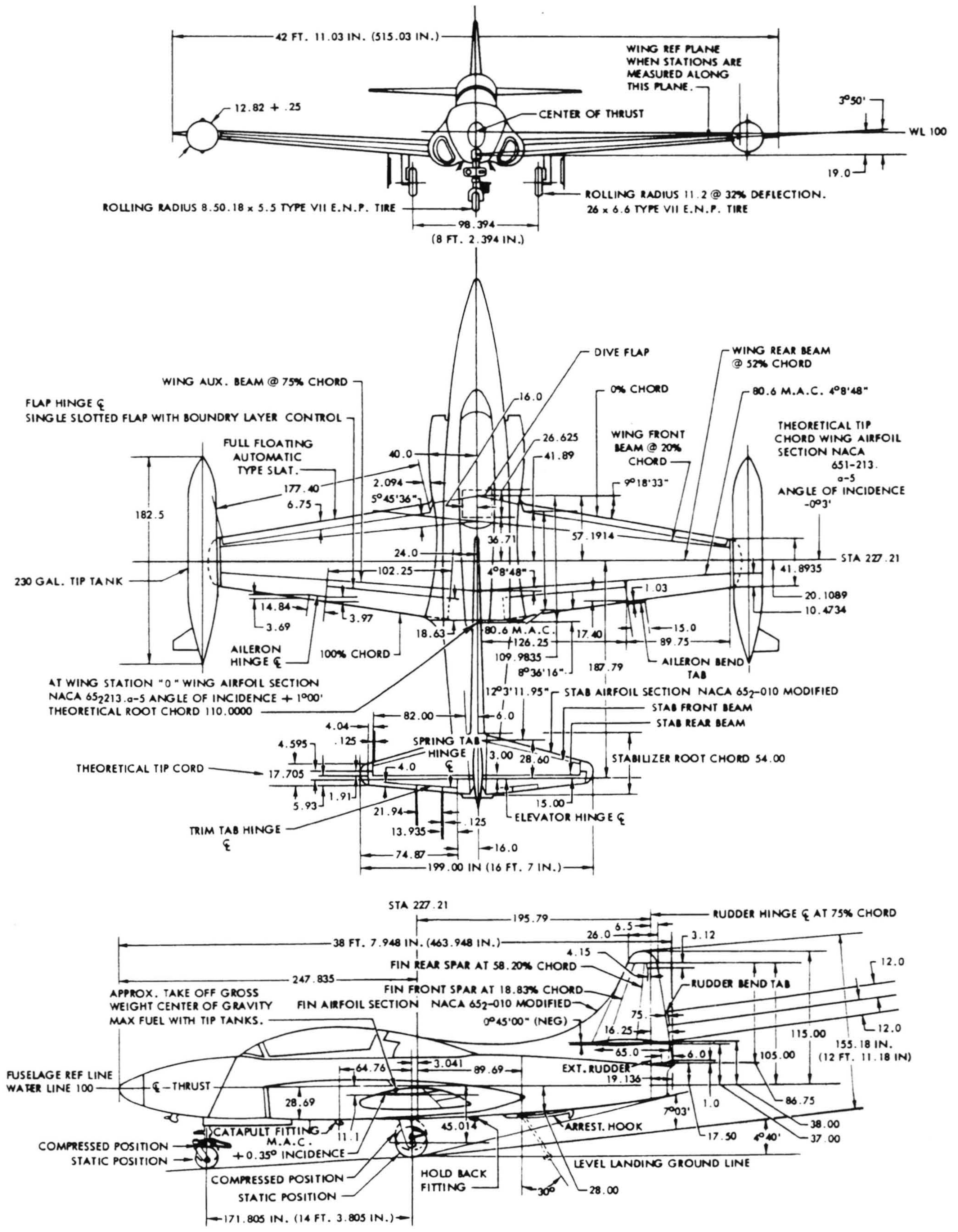




Above, T-1A 144129 at MCAS Beaufort, SC on 15 May 1965. Trim was red/orange with the horizontal stabilizers being white. The nose gear was natural metal. (USMC via Robert Dorr) At left, tail of 144216 in storage on 3-17-70. (Swisher) Below, T-1A 144750 at Pensacola in 1970. The inside of the canopy was painted black. (USN) Bottom, T-1A 144174 at Pensacola on 23 May 1967. (Clay Jansson)



T2V-1/T-1A GENERAL DIMENSIONS


42 FT. 11.03 IN. (515.03 IN.)
WING REF PLANE WHEN STATIONS ARE MEASURED ALONG THIS PLANE.
12.82 + .25
CENTER OF THRUST
3°50'
WL 100
19.0
ROLLING RADIUS 8.50.18 x 5.5 TYPE VII E.N.P. TIRE
ROLLING RADIUS 11.2 @ 32% DEFLECTION. 26 x 6.6 TYPE VII E.N.P. TIRE
98.394 (8 FT. 2.394 IN.)
DIVE FLAP
WING REAR BEAM @ 52% CHORD
WING AUX. BEAM @ 75% CHORD
0% CHORD
80.6 M.A.C. 4°8'48"
FLAP HINGE ℄
SINGLE SLOTTED FLAP WITH BOUNDRY LAYER CONTROL
16.0
FULL FLOATING AUTOMATIC TYPE SLAT.
26.625
41.89
WING FRONT BEAM @ 20% CHORD
THEORETICAL TIP CHORD WING AIRFOIL SECTION NACA 651-213. a-5
ANGLE OF INCIDENCE -0°3'
40.0
2.094
5°45'36"
9°18'33"
177.40
6.75
182.5
36.71
57.1914
24.0
STA 227.21
102.25
4°8'48"
41.8935
230 GAL. TIP TANK
1.03
20.1089
10.4734
14.84
3.69
3.97
18.63
80.6 M.A.C.
126.25
17.40
15.0
89.75
AILERON HINGE ℄
100% CHORD
109.9835
8°36'16"
187.79
AILERON BEND TAB
AT WING STATION "0" WING AIRFOIL SECTION NACA 65₂213.a-5 ANGLE OF INCIDENCE + 1°00' THEORETICAL ROOT CHORD 110.0000
12°3'11.95"
STAB AIRFOIL SECTION NACA 65₂-010 MODIFIED
STAB FRONT BEAM
STAB REAR BEAM
82.00
6.0
4.04
.125
4.595
SPRING TAB HINGE ℄
3.00
28.60
STABILIZER ROOT CHORD 54.00
THEORETICAL TIP CORD
17.705
4.0
1.91
5.93
21.94
15.00
ELEVATOR HINGE ℄
.125
13.935
TRIM TAB HINGE ℄
16.0
74.87
199.00 IN (16 FT. 7 IN.)
STA 227.21
195.79
RUDDER HINGE ℄ AT 75% CHORD
6.5
26.0
3.12
38 FT. 7.948 IN. (463.948 IN.)
4.15
FIN REAR SPAR AT 58.20% CHORD
12.0
247.835
RUDDER BEND TAB
FIN FRONT SPAR AT 18.83% CHORD
APPROX. TAKE OFF GROSS WEIGHT CENTER OF GRAVITY MAX FUEL WITH TIP TANKS.
FIN AIRFOIL SECTION NACA 65₂-010 MODIFIED
0°45'00" (NEG)
75.
16.25
12.0
115.00
155.18 IN. (12 FT. 11.18 IN)
65.0
6.0
105.00
64.76
3.041
89.69
EXT. RUDDER
19.136
FUSELAGE REF LINE WATER LINE 100
℄ - THRUST
28.69
86.75
7°03'
1.0
38.00
CATAPULT FITTING
M.A.C. + 0.35° INCIDENCE
11.1
45.014
ARREST. HOOK
17.50
4°40'
37.00
COMPRESSED POSITION
STATIC POSITION
LEVEL LANDING GROUND LINE
COMPRESSED POSITION
STATIC POSITION
HOLD BACK FITTING
30°
28.00
171.805 IN. (14 FT. 3.805 IN.)

THE AIRCRAFT

THE AIRCRAFT

The Navy Model T2V-1, manufactured by Lockheed, was a two place, single engine, jet propelled high performance trainer designed for land or carrier operations. Design features include fully automatic leading edge slats and single-slotted trailing edge flaps with blowing system boundary layer control. The airplane had fixed wing tip tanks, an arresting hook and catapult equipment.

DIMENSIONS

Wing	Area	233 sq. ft.
	Span	42 ft. 11 in.
	MAC	6 ft. 9 in.
Length		38 ft. 8 in.
Height		12 ft. 11 in.
Tread		8 ft. 2 in.

WEIGHTS

Empty	10,844 lbs.
Basic	11,023 lbs.
Design	16,600 lbs.
Combat	13,899 lbs.
Max T.O. (field)	16,600 lbs.
(catapult)	16,500 lbs.
Max landing (field)	14,500 lbs.
(catapult)	14,500 lbs.

POWER PLANT

Allison J33-A-24

Length	107"
Diameter	50"
Ratings:	
Military 6,100 lbs. @ 11,800 rpm	
Normal 5,050 lbs. @ 11,200 rpm	
Fuel	770.4 gal
Fuel grade	JP-4
Oil	3 gal
Grade	1010

ELECTRONICS

Automatic Dir Finder	AN/ARA-25
UHF Command	AN/ARC-27A
Marker Beacon Rec	AN/ARN-12
Radio Compass Rec	AN/ARN-6
VHF Navigation Rec	AN/ARN-14E
TACAN	AN/ARN-21
Glide Path Rec	AN/ARN-18
Identification Radar	AN/APX-6
Coder	AN/APA-89
Interphone	AN/AIC-10
Radar Altimeter	AN/APN-22

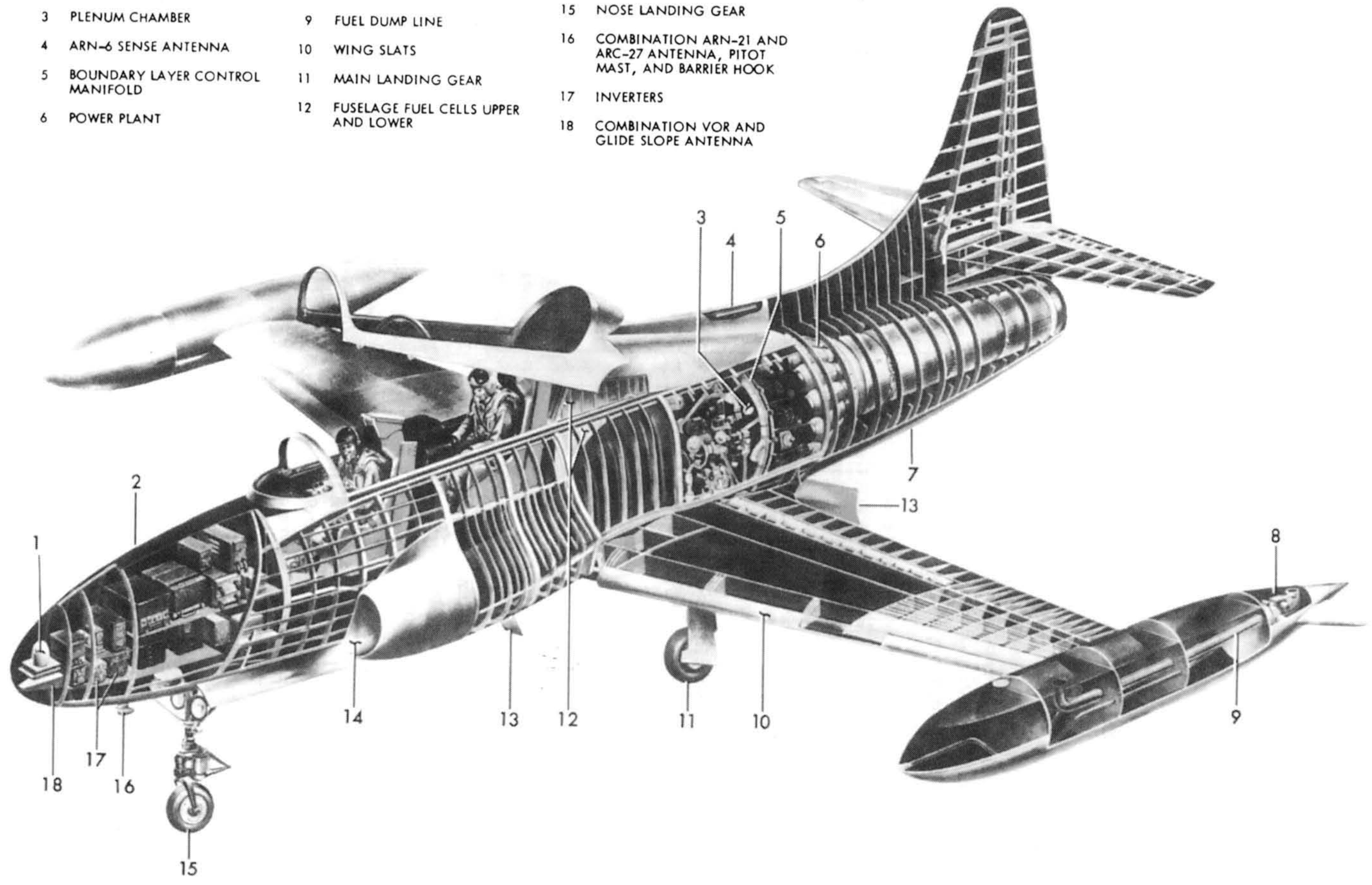
PRODUCTION RUN

N125D	C/N 1000
142261-142268	C/N 1001-1008
142397-142399	C/N 1009-1011
142533-142541	C/N 1012-1020
144117-144216	C/N 1021-1120
144735-144764	C/N 1121-1150

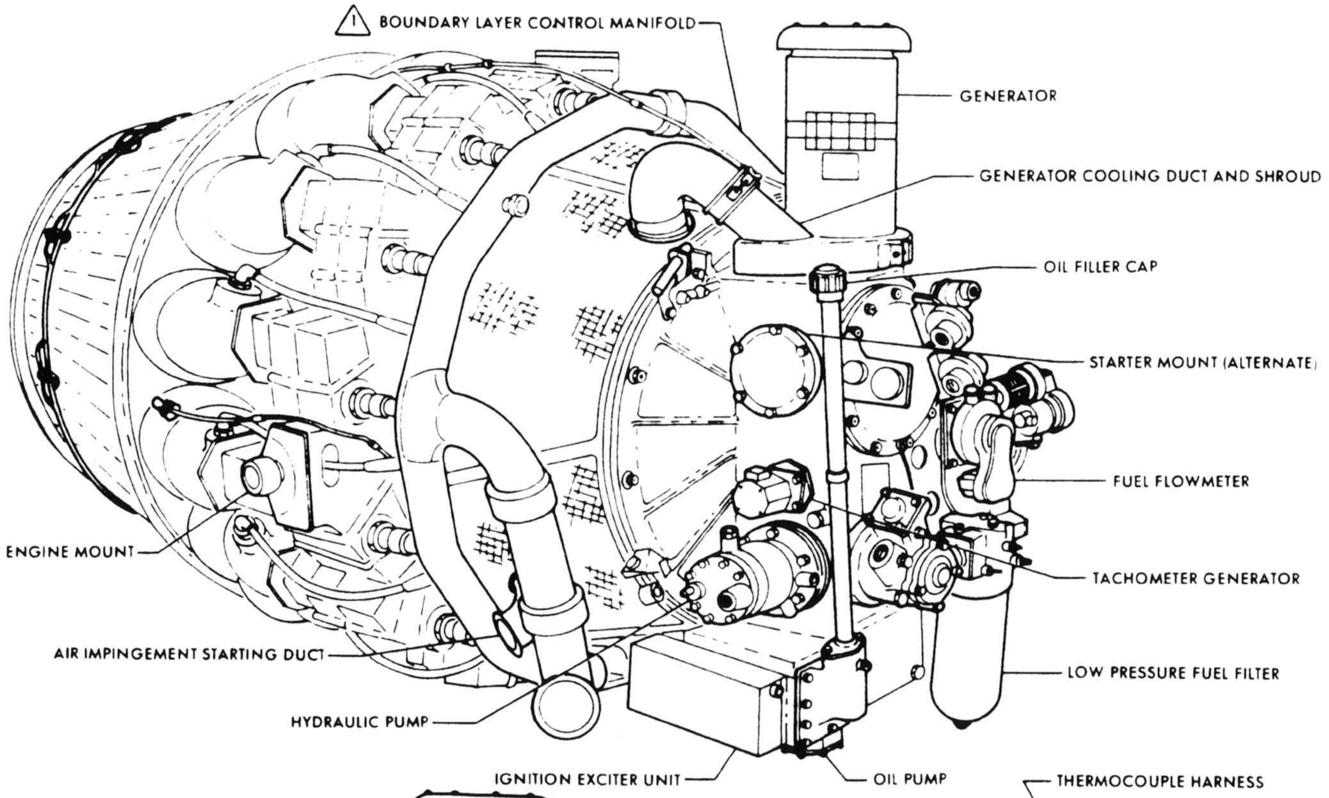
Total 150 T2V-1s plus one prototype

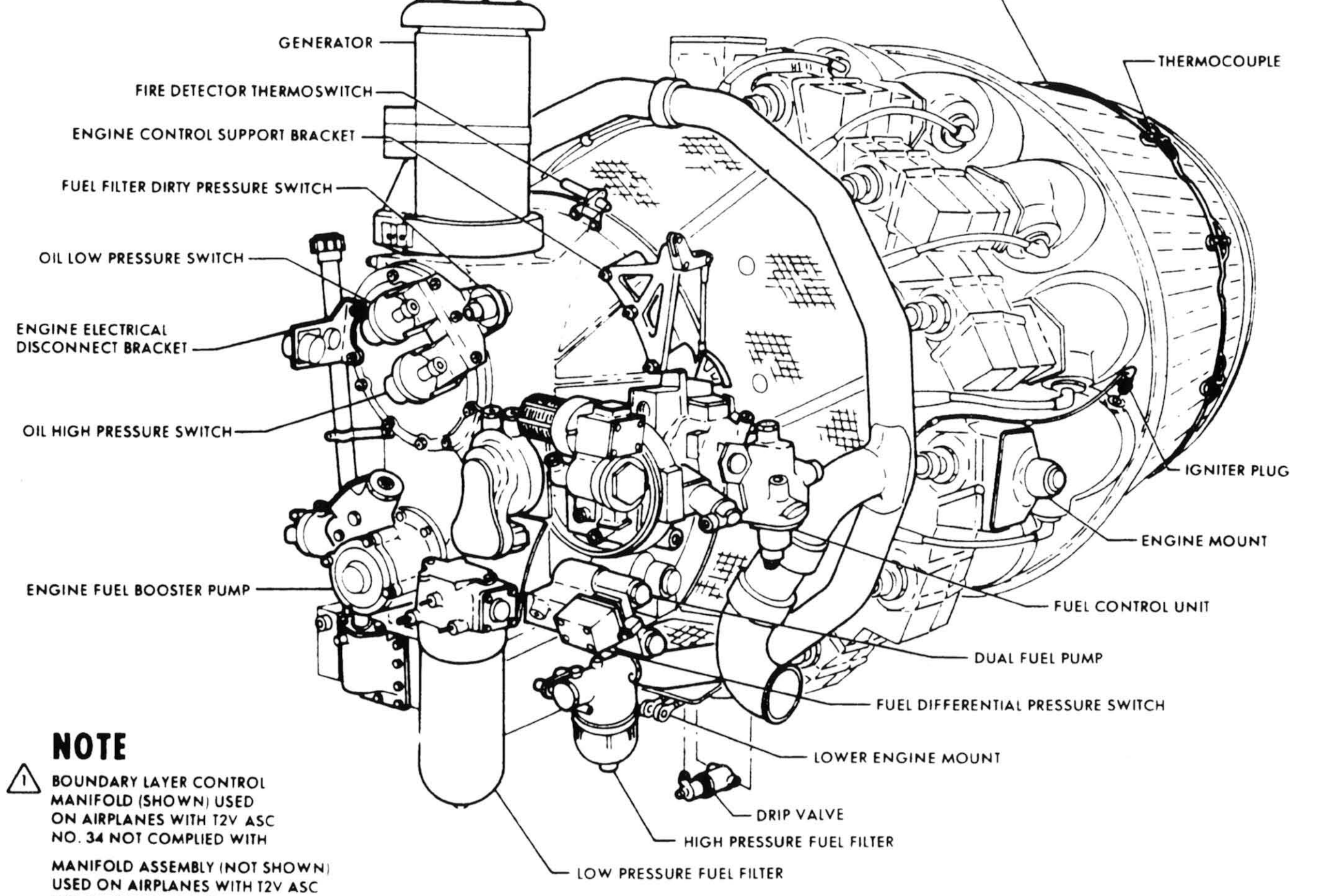
GENERAL ARRANGEMENT

1	AN/ARN-6 LOOP ANTENNA
2	RADIO EQUIPMENT COMPARTMENT
3	PLENUM CHAMBER
4	ARN-6 SENSE ANTENNA
5	BOUNDARY LAYER CONTROL MANIFOLD
6	POWER PLANT
7	ARRESTING GEAR
8	FUEL DUMP VALVE - MOTOR OPERATED
9	FUEL DUMP LINE
10	WING SLATS
11	MAIN LANDING GEAR
12	FUSELAGE FUEL CELLS UPPER AND LOWER
13	SPEED BRAKES
14	ENGINE AIR INTAKE SCOOP
15	NOSE LANDING GEAR
16	COMBINATION ARN-21 AND ARC-27 ANTENNA, PITOT MAST, AND BARRIER HOOK
17	INVERTERS
18	COMBINATION VOR AND GLIDE SLOPE ANTENNA



ENGINE ACCESSORIES



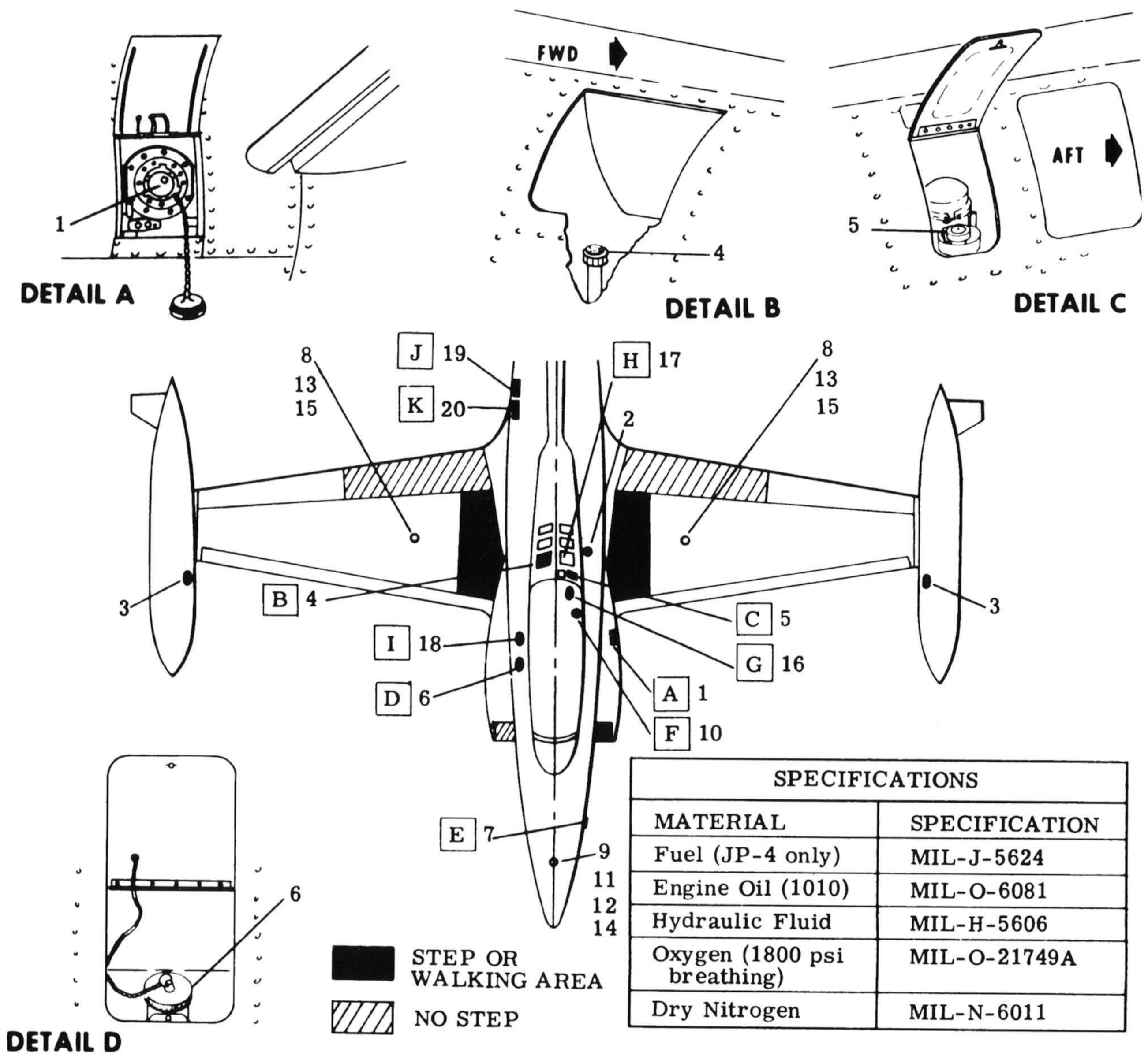


NOTE

⚠ **BOUNDARY LAYER CONTROL MANIFOLD (SHOWN) USED ON AIRPLANES WITH T2V ASC NO. 34 NOT COMPLIED WITH**

MANIFOLD ASSEMBLY (NOT SHOWN) USED ON AIRPLANES WITH T2V ASC NO. 34 COMPLIED WITH

SERVICING DIAGRAM

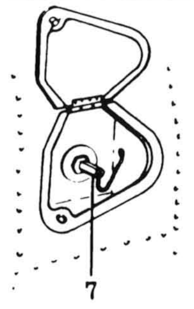


■ STEP OR WALKING AREA

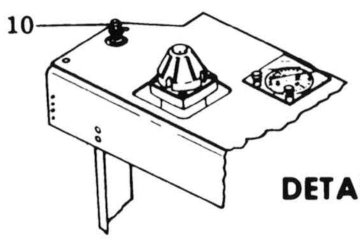
▨ NO STEP

SPECIFICATIONS	
MATERIAL	SPECIFICATION
Fuel (JP-4 only)	MIL-J-5624
Engine Oil (1010)	MIL-O-6081
Hydraulic Fluid	MIL-H-5606
Oxygen (1800 psi breathing)	MIL-O-21749A
Dry Nitrogen	MIL-N-6011

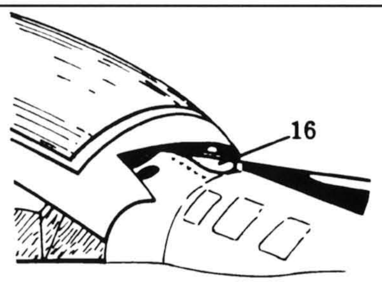
1. SINGLE POINT REFUELING VALVE - INCLUDING BOTH TIP TANKS - 760 U.S. GALS. SEE DETAIL A.
2. FUSELAGE FILLER -INTERNAL TANKS - 300 U.S. GALS.
3. TIP TANK FILLER - 230 U.S. GALS. EACH.
4. ENGINE OIL FILLER - 3 U.S. GALS. SEE DETAIL B.
5. MAIN HYDRAULIC SYSTEM RESERVOIR - FILL TO FULL MARK ON SIGHT GAGE. SEE DETAIL C.
6. EMERGENCY HYDRAULIC RESERVOIR - FILL TO BASE OF FILLER WELL. SEE DETAIL D.
7. OXYGEN SYSTEM FILLER VALVE - FILL WITH BREATHING OXYGEN - 1800 PSI AT 21°C (70°F). SEE DETAIL E.
8. MAIN LANDING GEAR STRUT AIR FILLER VALVE - INFLATE STRUT WITH AIR OR NITROGEN FOR 3 INCH STRUT EXTENSION.
9. NOSE LANDING GEAR STRUT AIR FILLER VALVE - (FOR CARRIER AND FCLP OPERATION - INFLATE STRUT WITH AIR OR NITROGEN FOR 11 INCH STRUT EXTENSION. FOR LAND BASED OPERATIONS EXCEPT FCLP - INFLATE STRUT WITH AIR OR NITROGEN FOR 3 INCH STRUT EXTENSION).
10. CANOPY REMOVER BOTTLE FILLER VALVE - FILL WITH AIR OR NITROGEN. SEE DETAIL F AND FIGURE 1-44.
11. NOSE GEAR SHIMMY DAMPER - FILL WITH HYDRAULIC FLUID.
12. NOSE LANDING GEAR FLUID STRUT FILLER - FILL WITH HYDRAULIC FLUID.
13. MAIN LANDING GEAR FLUID STRUT FILLER - FILL WITH HYDRAULIC FLUID.
14. NOSE LANDING GEAR TIRE - INFLATE WITH AIR TO 170 PSI.
15. MAIN LANDING GEAR TIRES - (FOR CARRIER OPERATIONS - INFLATE TO 270 PSI - FOR LAND BASED OPERATIONS INFLATE TO 164 PSI).
16. MANUAL FUELING CAP. SEE DETAIL G.
17. HYDRAULIC ACCUMULATOR AND PRESSURE GAGE. SEE DETAIL H.
18. EXTERNAL CANOPY CONTROLS. SEE DETAIL I.
19. EXTERNAL POWER. SEE DETAIL J.
20. IMPINGEMENT AIR. SEE DETAIL K.



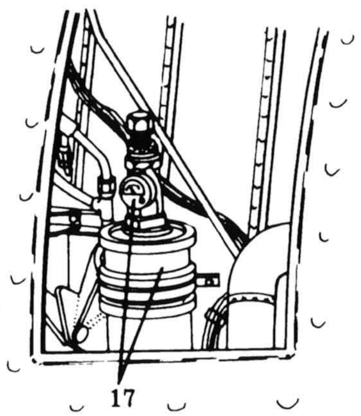
DETAIL E

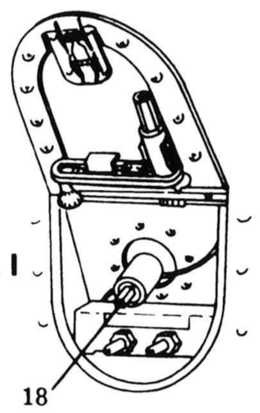


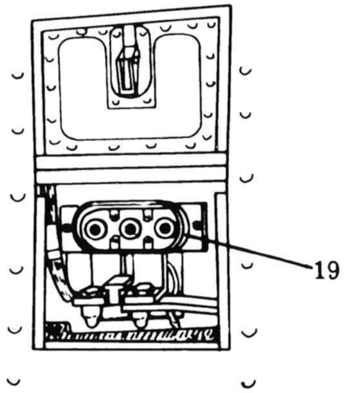
AFT COCKPIT LEFT SHELF

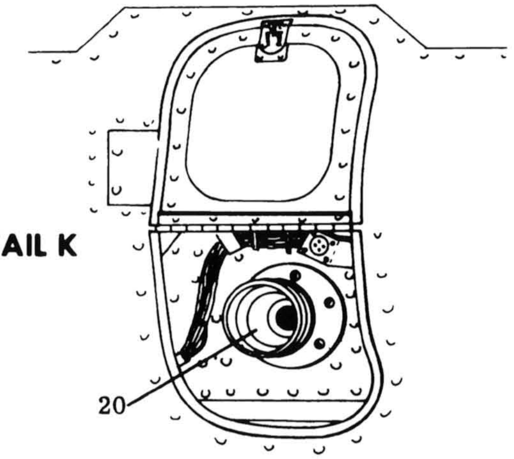


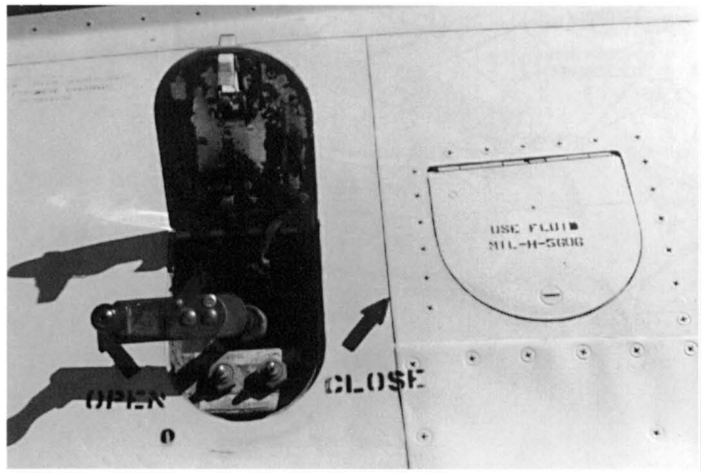
DETAIL G



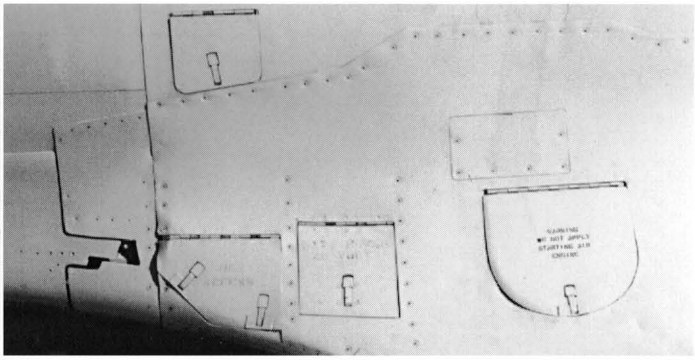




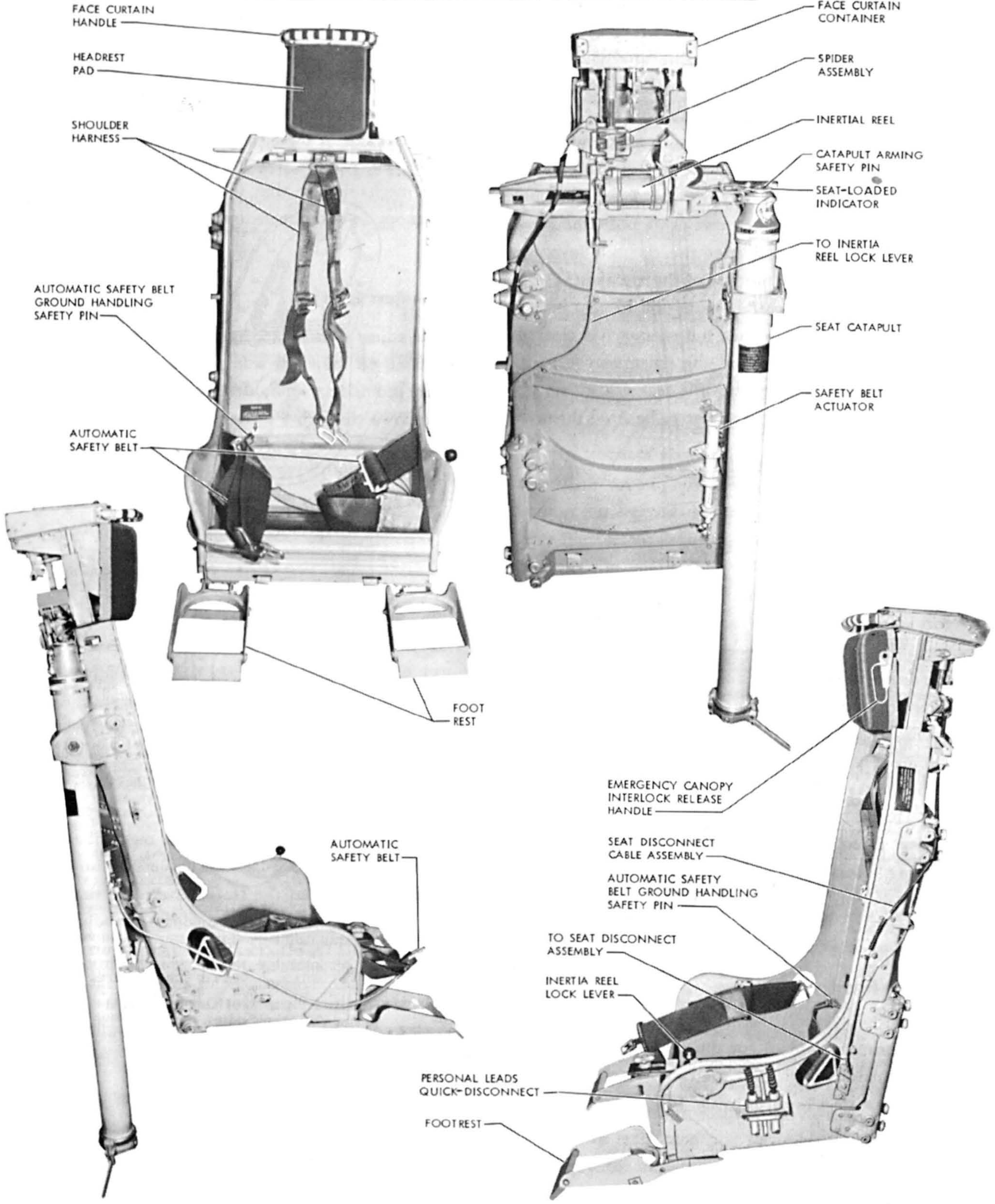




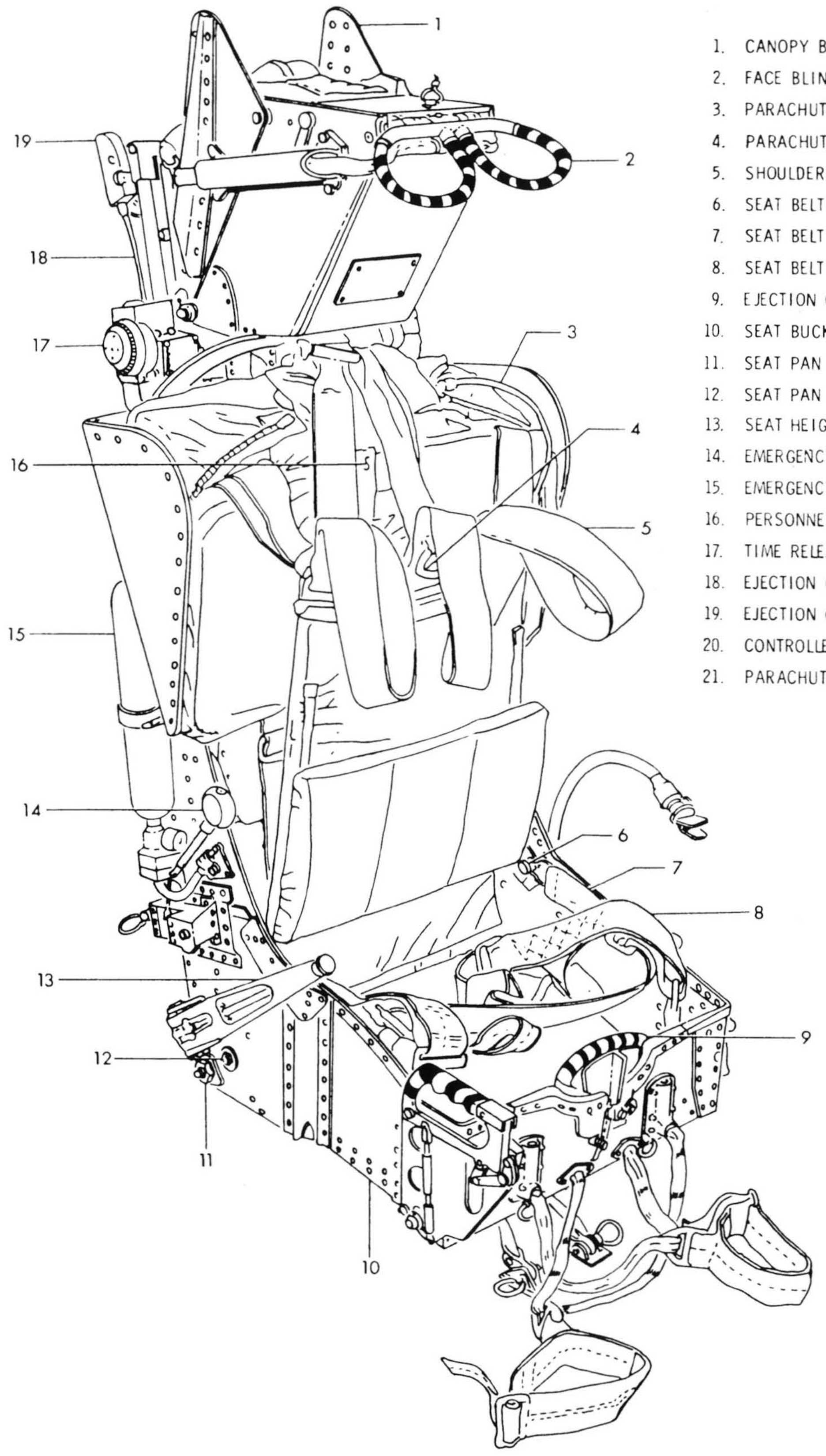
At left, close-up of detail I, external canopy controls with hand crank attached. Below, detail K (right), impingement air and detail J (left), external power recepticle. (Doug Slowiak)



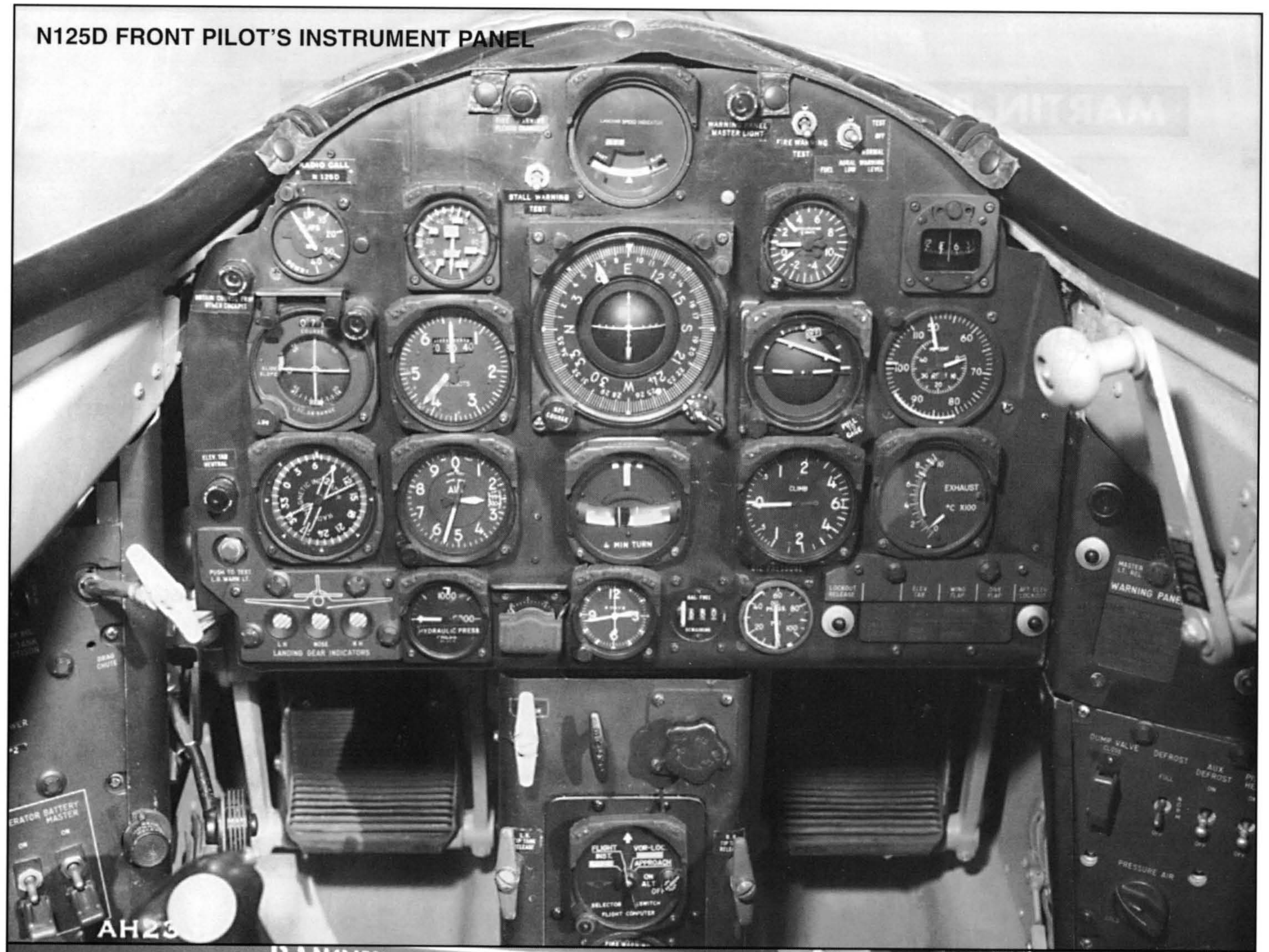
LOCKHEED EJECTION SEAT


FACE CURTAIN HANDLE
HEADREST PAD
SHOULDER HARNESS
AUTOMATIC SAFETY BELT GROUND HANDLING SAFETY PIN
AUTOMATIC SAFETY BELT
FACE CURTAIN CONTAINER
SPIDER ASSEMBLY
INERTIAL REEL
CATAPULT ARMING SAFETY PIN
SEAT-LOADED INDICATOR
TO INERTIA REEL LOCK LEVER
SEAT CATAPULT
SAFETY BELT ACTUATOR
FOOT REST
AUTOMATIC SAFETY BELT
EMERGENCY CANOPY INTERLOCK RELEASE HANDLE
SEAT DISCONNECT CABLE ASSEMBLY
AUTOMATIC SAFETY BELT GROUND HANDLING SAFETY PIN
TO SEAT DISCONNECT ASSEMBLY
INERTIA REEL LOCK LEVER
PERSONAL LEADS QUICK-DISCONNECT
FOOTREST

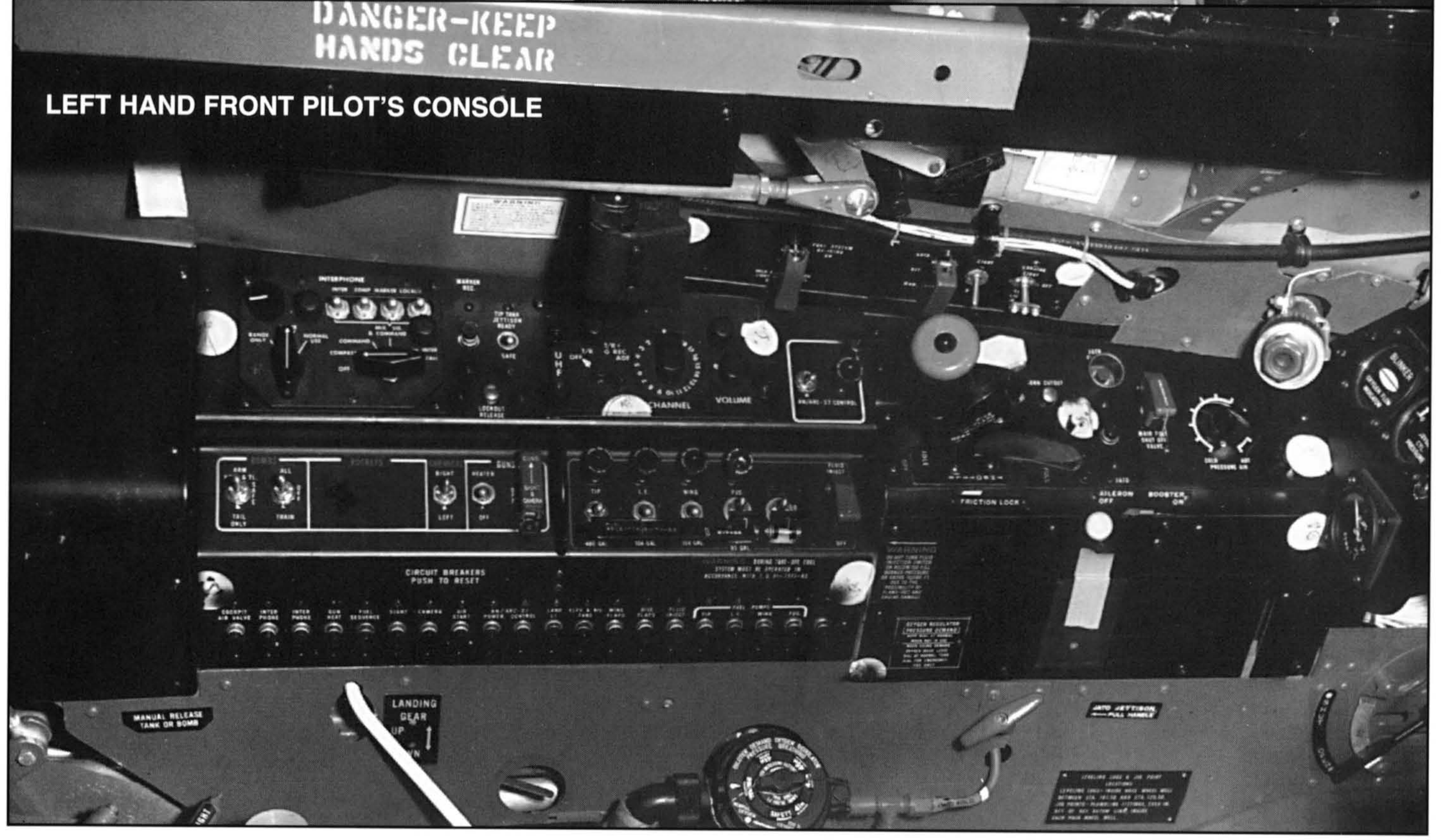
MARTIN-BAKER MK L-5 EJECTION SEAT



1. CANOPY BREAKERS
2. FACE BLIND HANDLE
3. PARACHUTE RIPCORD O-RING
4. PARACHUTE RIPCORD HANDLE
5. SHOULDER HARNESS
6. SEAT BELT STICKER
7. SEAT BELT STICKER STRAP
8. SEAT BELT AND PARARAFT ATTACHMENT HARNESS
9. EJECTION GUN SECONDARY FIRING HANDLE
10. SEAT BUCKET
11. SEAT PAN GUIDE SLIPPER ADJUSTMENT
12. SEAT PAN HARNESS RELEASE LOCK MECHANISM
13. SEAT HEIGHT ADJUST HANDLE
14. EMERGENCY OXYGEN MANUAL RELEASE KNOB
15. EMERGENCY OXYGEN BOTTLE
16. PERSONNEL PARACHUTE RESTRAINT STRAP
17. TIME RELEASE MECHANISM
18. EJECTION GUN SECONDARY FIRING CABLE
19. EJECTION GUN SEAR WITHDRAWAL CROSS-SHAFT
20. CONTROLLER DROGUE PARACHUTE WITHDRAWAL LINE
21. PARACHUTE LINK LINE SEVERING KNIFE (GUILLOTINE)



N125D FRONT PILOT'S INSTRUMENT PANEL

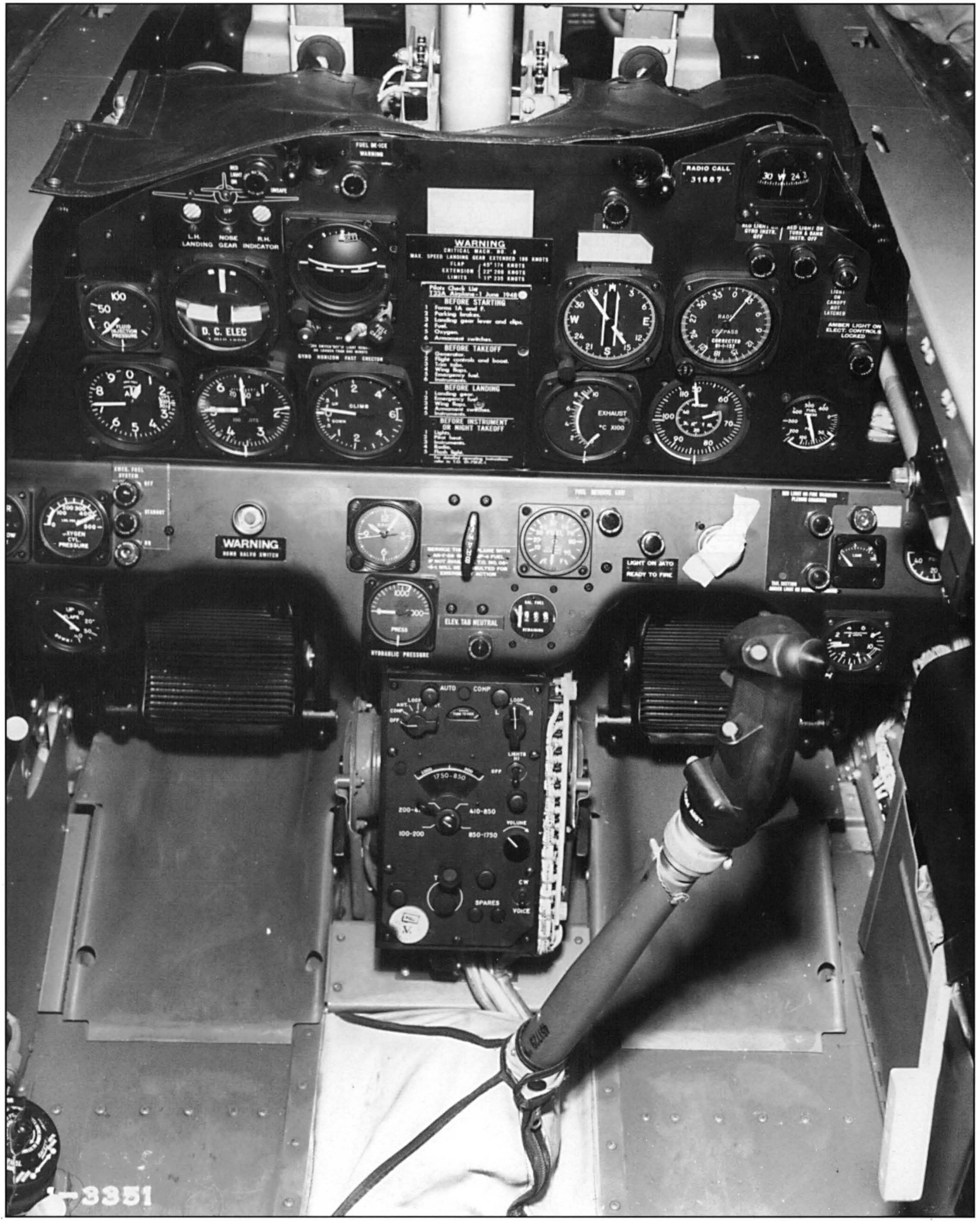


LEFT HAND FRONT PILOT'S CONSOLE

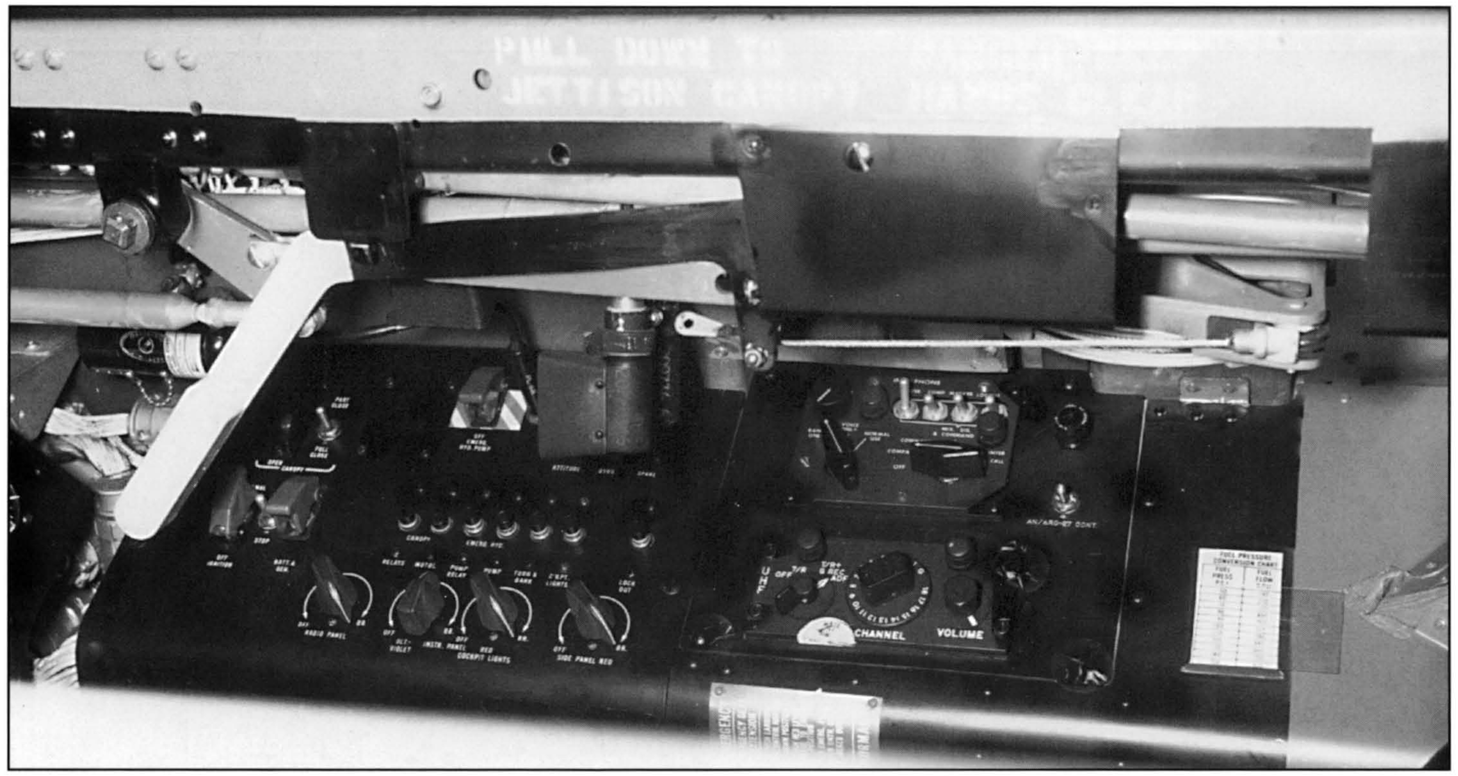
DANGER-KEEP HANDS CLEAR
CHANNEL
VOLUME
CIRCUIT BREAKERS PUSH TO RESET
FRICTION LOCK
AILERON BOOSTER
LANDING GEAR
MANUAL RELEASE TANK OR BOMB
JATO JETTISON —PULL HANDLE

N125D REAR PILOT'S INSTRUMENT PANEL

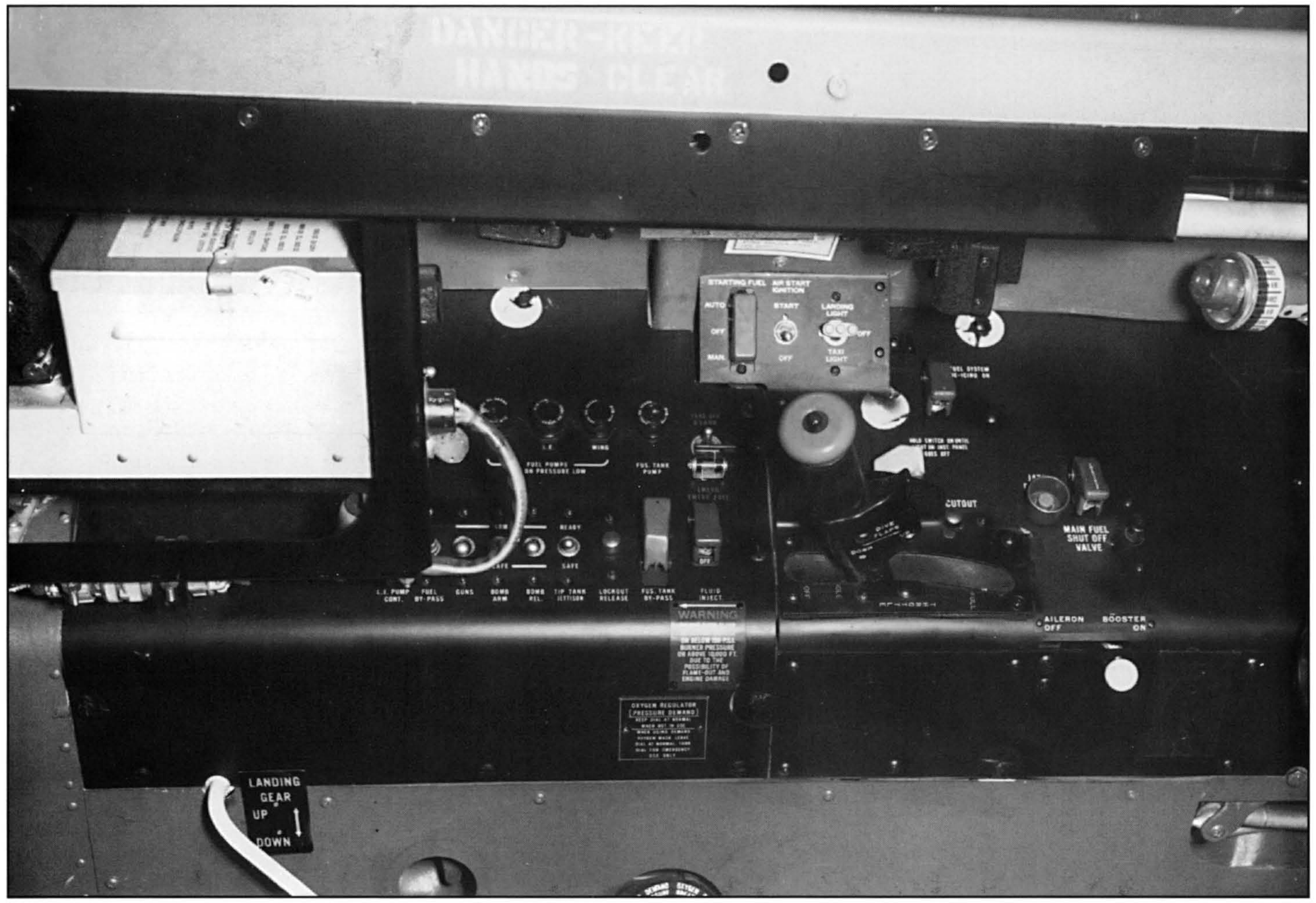
N125D had a rear cockpit instrument panel that was virtually identical to the Navy's T2V/T-33B jet trainer. (Lockheed)



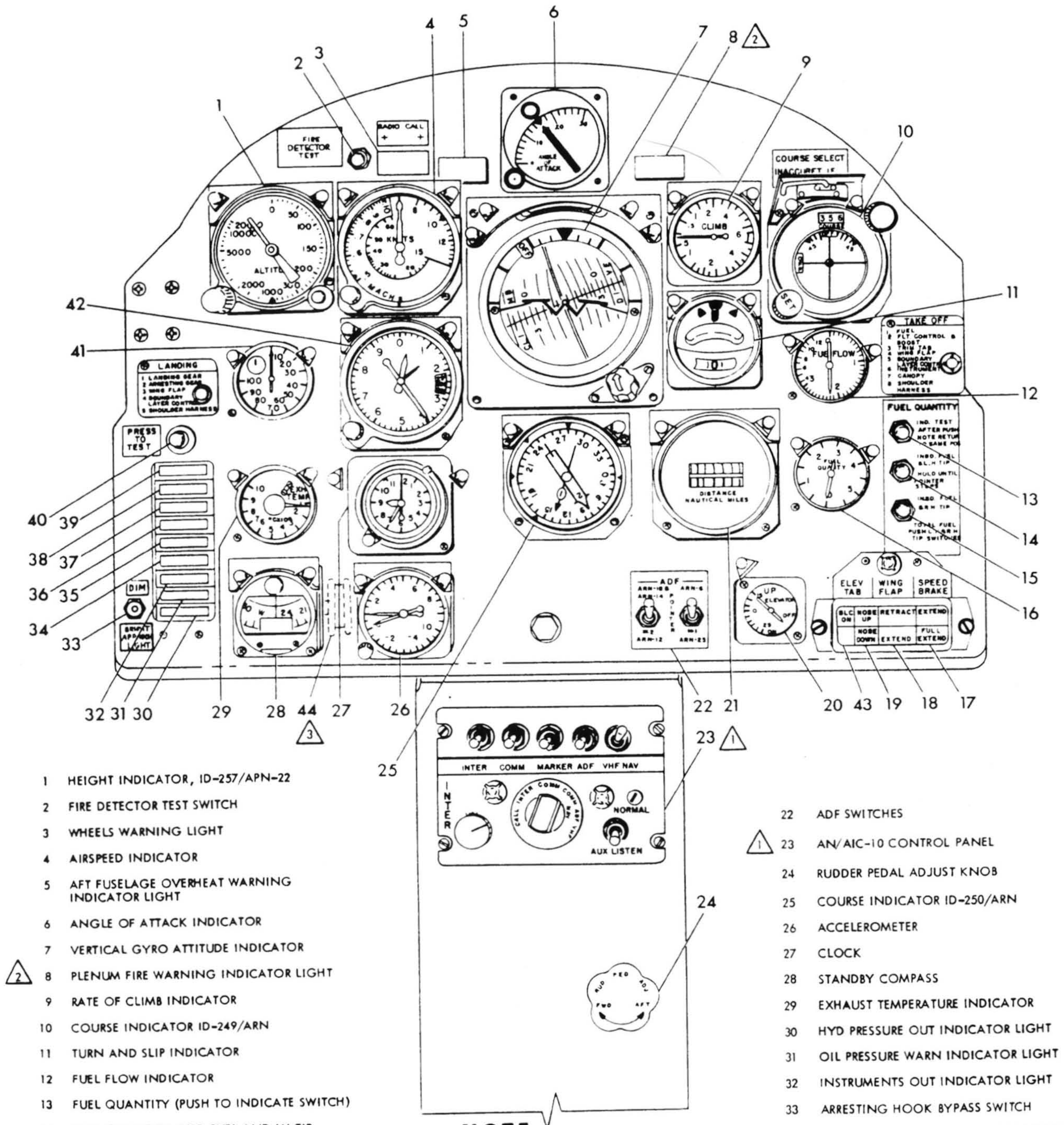
N125D REAR PILOT'S RIGHT HAND CONSOLE



N125D REAR PILOT'S LEFT HAND CONSOLE



PILOT'S INSTRUMENT PANEL FRONT COCKPIT



1 HEIGHT INDICATOR, ID-257/APN-22
2 FIRE DETECTOR TEST SWITCH
3 WHEELS WARNING LIGHT
4 AIRSPEED INDICATOR
5 AFT FUSELAGE OVERHEAT WARNING INDICATOR LIGHT
6 ANGLE OF ATTACK INDICATOR
7 VERTICAL GYRO ATTITUDE INDICATOR
△2 8 PLENUM FIRE WARNING INDICATOR LIGHT
9 RATE OF CLIMB INDICATOR
10 COURSE INDICATOR ID-249/ARN
11 TURN AND SLIP INDICATOR
12 FUEL FLOW INDICATOR
13 FUEL QUANTITY (PUSH TO INDICATE SWITCH)
14 FUEL QUANTITY INBD FUEL AND LH TIP (PUSH TO INDICATE SWITCH)
15 FUEL QUANTITY INBD FUEL AND RH TIP (PUSH TO INDICATE SWITCH)
16 FUEL QUANTITY INDICATOR
17 SPEED BRAKE (EXTEND) (FULL EXTEND) INDICATOR LIGHT
18 WING FLAP (RETRACT) (EXTEND) INDICATOR LIGHT
19 ELEVATOR TRIM TAB (NOSE UP) (NOSE DOWN) INDICATOR LIGHT
20 ELEVATOR TRIM TAB POSITION INDICATOR
21 RANGE INDICATOR ID-310/ARN

NOTE

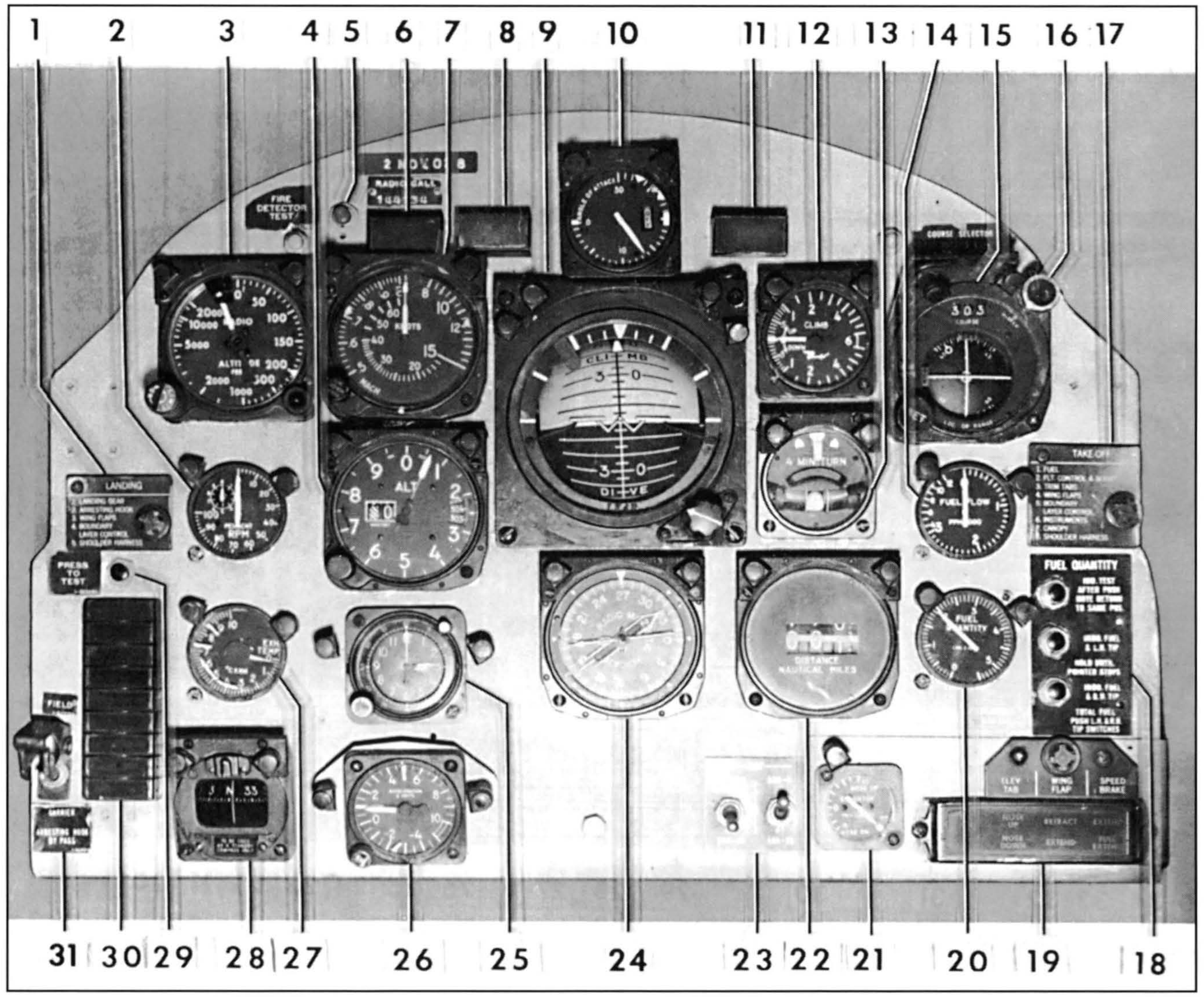
△1 AN/ARN-6 CONTROL PANEL INSTALLED IN THIS LOCATION ON BUNO 142261 AND 142263

△2 USED ON AIRPLANES BLOCK a THROUGH d

△3 USED ON AIRPLANES BLOCK h AND UP

22 ADF SWITCHES
△1 23 AN/AIC-10 CONTROL PANEL
24 RUDDER PEDAL ADJUST KNOB
25 COURSE INDICATOR ID-250/ARN
26 ACCELEROMETER
27 CLOCK
28 STANDBY COMPASS
29 EXHAUST TEMPERATURE INDICATOR
30 HYD PRESSURE OUT INDICATOR LIGHT
31 OIL PRESSURE WARN INDICATOR LIGHT
32 INSTRUMENTS OUT INDICATOR LIGHT
33 ARRESTING HOOK BYPASS SWITCH
34 TURN AND SLIP OUT INDICATOR LIGHT
35 FUEL LEVEL LOW INDICATOR LIGHT
36 ENGINE FUEL PUMP FAIL INDICATOR LIGHT
37 FUEL FILTER DIRTY INDICATOR LIGHT
38 GENERATOR OUT INDICATOR LIGHT
39 CANOPY UNLATCHED INDICATOR LIGHT
40 ANNUNCIATOR MASTER TEST SWITCH
41 TACHOMETER
42 ALTIMETER
43 BOUNDARY LAYER CONTROL (ON) INDICATOR LIGHT
△3 44 STANDBY COMPASS COMPENSATING COIL

INSTRUMENT PANEL - FRONT COCKPIT



Instrument Panel - Front Cockpit

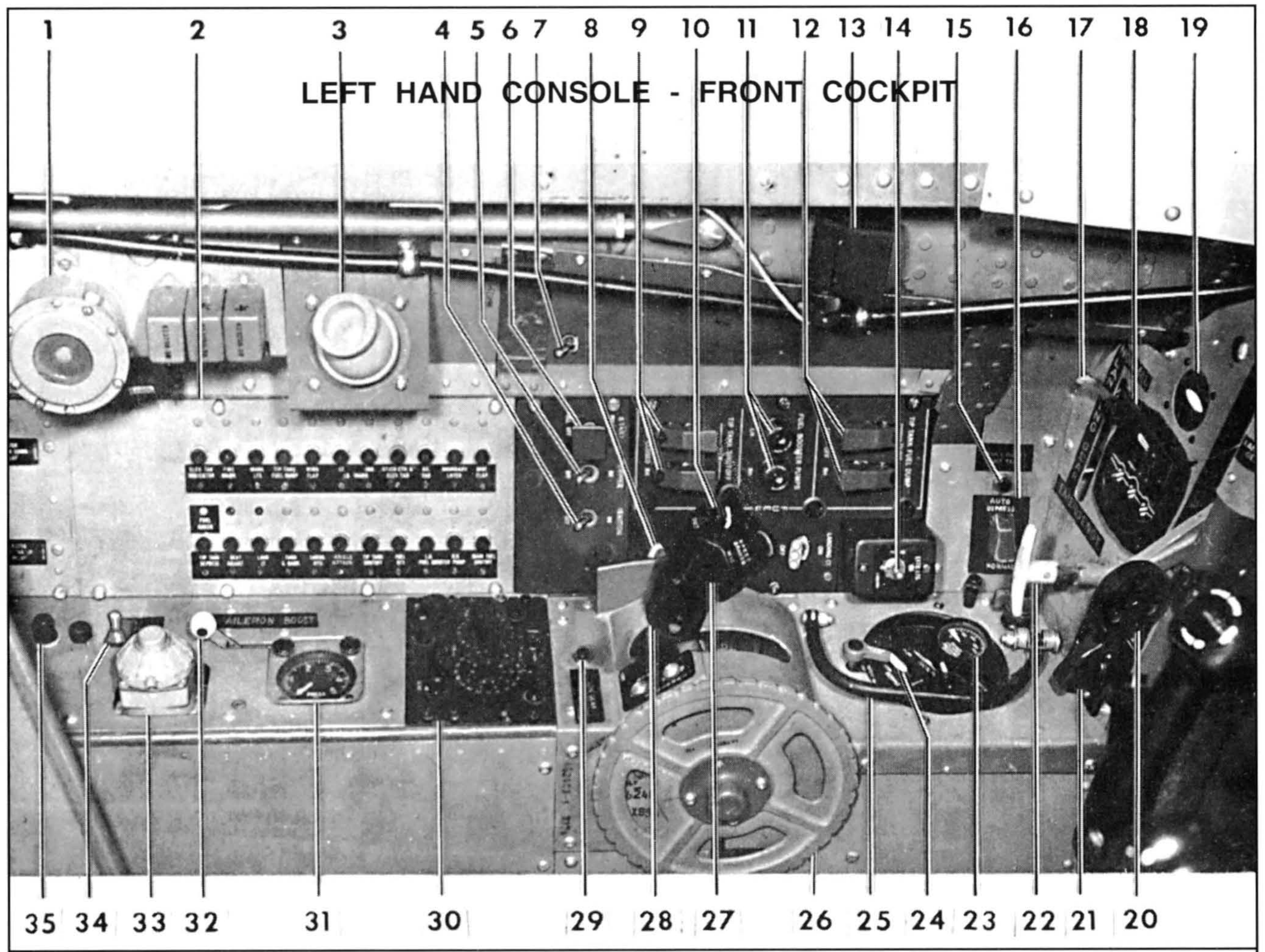
1.) Landing Checklist
2.) Tachometer (% RPM)
3.) AN/APN-22 Radio Altimeter Ind.
4.) Altimeter
5.) Fire Detector Test Switch
6.) Landing Gear Warning Light
7.) Airspeed Indicator (Machmeter)
8.) Aft Overheat Warning Light
9.) B1-A Attitude Indicator
10.) Angle of Attack Indicator
11.) Plenum Fire Warning Light
12.) Vertical Velocity Indicator
13.) Turn and Slip Indicator
14.) Fuel Flowmeter
15.) ID/249 Cross-Pointer Indicator
16.) AN/ARN-12 Marker Beacon
17.) Takeoff Checklist
18.) Fuel Quantity Indicator Switches
19.) Tell-Tale Light Indicator
20.) Fuel Quantity Indicator
21.) Elevator Trim Indicator
22.) ID/310 Distance Indicator
23.) ID/250 Pointer Selector Switches
24.) ID/250 Radio Magnetic Ind. (RMI)
25.) Eight-Day Clock
26.) Accelerometer
27.) Exhaust Temperature Indicator
28.) Standby Magnetic Compass
29.) Annunciator Warn. Panel Test Switch
30.) Annunciator Hook Bypass Switch
31.) Arresting Hook Bypass Switch

Left Hand Console - Front Cockpit

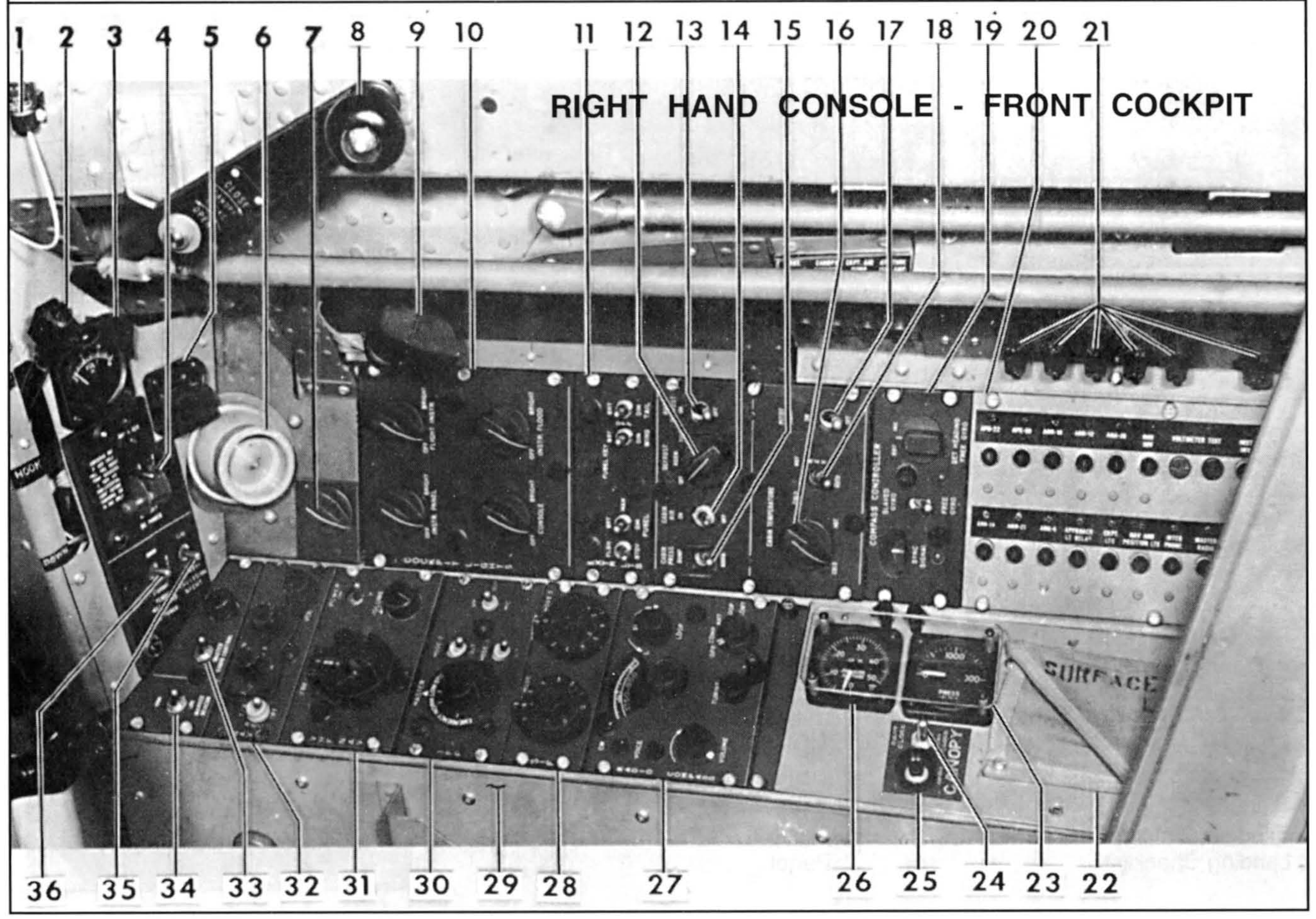
1.) Landing Gear Warning Horn
2.) Circuit Breaker Panel
3.) Ram Air Outlet
4.) Ignition Switch (142261-142263)
5.) Primer Switch 6.) Start Switch
7.) Aileron Trim Switch (late aircraft)
8.) Wing Flap Lever
9.) Tip Tank Shutoff Switches
10.) Speedbrake Switch
11.) Fuel Boost Pumps Warning Lights
12.) Tip Tank Fuel Dump Switches
13.) Cockpit Floodlight
14.) Exterior Lights Master Switch
15.) Gear and Hook Light Test Switch
16.) Tip Tank Depressurization Switch
17.) Emergency Landing Gear Lever
18.) Gear and Flap Position Indicator
19.) Oxygen Blinker
20.) Landing Gear Handle
21.) Main Fuel Shutoff Switch
22.) Canopy Jettison T-Handle
23.) Oxygen Pressure Gage
24.) Oxygen Regulator
25.) Catapult Handgrip 26.) Throttle Friction
27.) Microphone Button 28.) Throttle
29.) Landing Gear Horn Cutout
30.) AN/ARC-27A Control Panel
31.) Canopy Jettison Cyl. Press. Gage
32.) Aileron Boost Lever
33.) G-Suit Control Valve
34.) Aileron Trim Switch (early planes)
35.) Spare Fuse

Right Hand Console - Front Cockpit

1.) Map Light
2.) Arresting Hook Handle 3.) Voltmeter
4.) Battery - Generator Switch 5.) Loadmeter
6.) Pressure Air Inlet
7.) Approach Indexer Rheostat
8.) Canopy Lock Handle 9.) Floodlight
10.) Cockpit Lighting Panel
11.) Exterior Lights Panel
12.) Normal Defrost Control
13.) Auxiliary Defrost Control
14.) Cabin Air Switch
15.) Cabin Pressure Dump Switch
16.) Cabin Temperature Selector
17.) Pitot Heat Switch (circuit breaker)
18.) Cabin Temperature Override Switch
19.) S-2 Compass Controller
20.) Circuit Breaker Panel 21.) Fuses
22.) Surface Control Lock Stowage
23.) Hydraulic Pressure Gage
24.) Canopy Close 25.) Canopy open Switch
26.) Cabin Pressure Altimeter
27.) AN/ARN-6 Control Panel
28.) AN/APA-89 Coder 29.) Map Case
30.) AN/APX-6B Identification Control Panel
31.) AN/ARN-14E VHF Receiver
32.) AN/ARN-21 DME Control Panel
33.) Master Radio Control Switch & Ind. Light
34.) AN/ARN-12 Marker Beacon Sensitivity Switch
35.) Anticollision Lights Switch
36.) A.C. Flight Instrument Power Switch

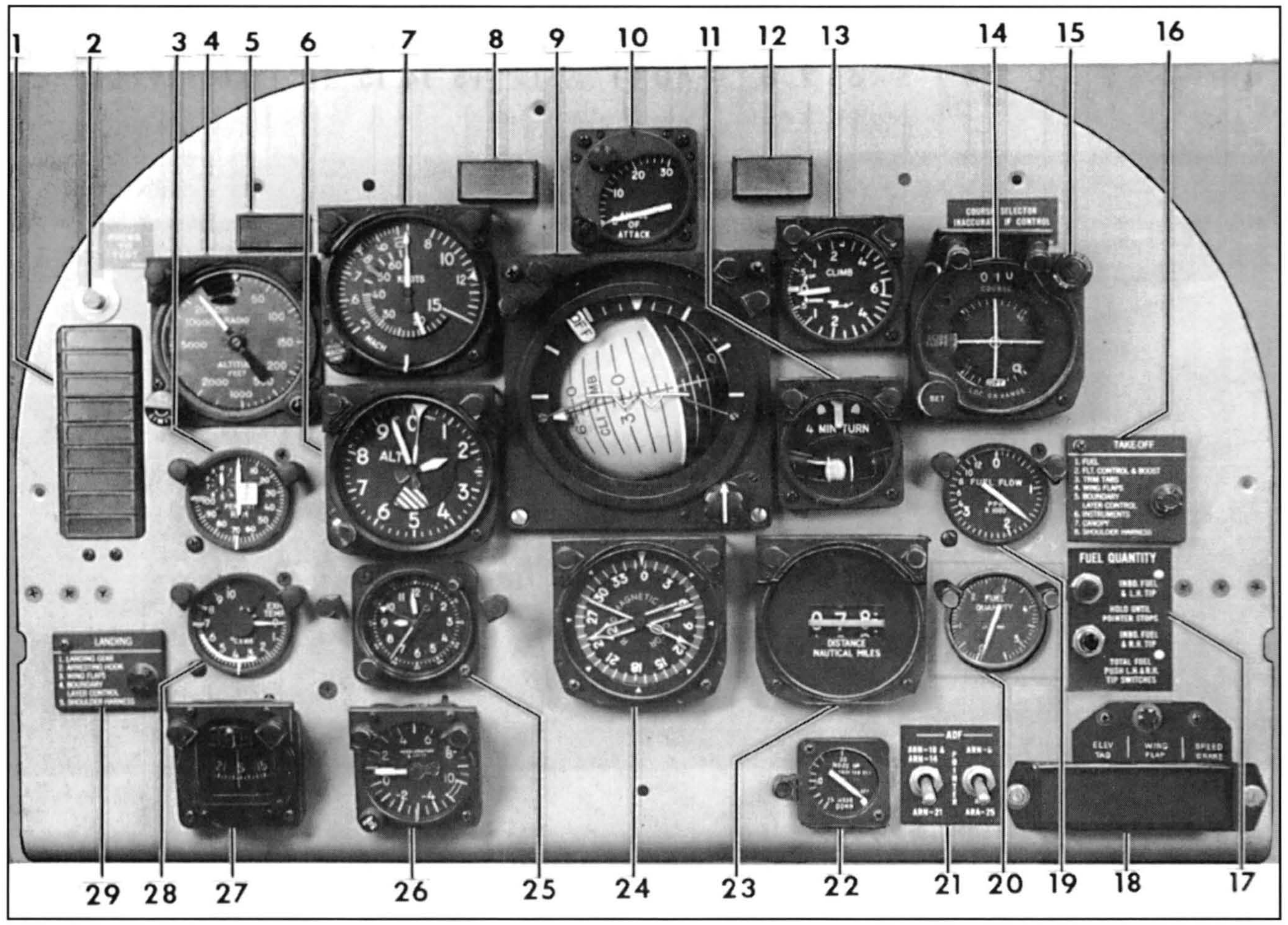


LEFT HAND CONSOLE - FRONT COCKPIT



RIGHT HAND CONSOLE - FRONT COCKPIT

INSTRUMENT PANEL - REAR COCKPIT

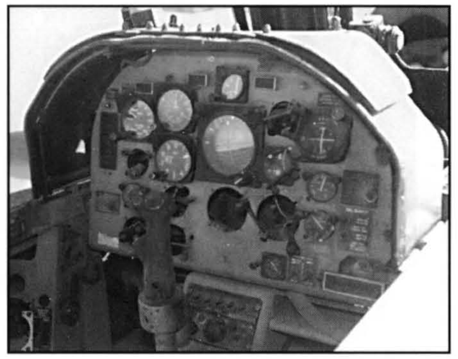


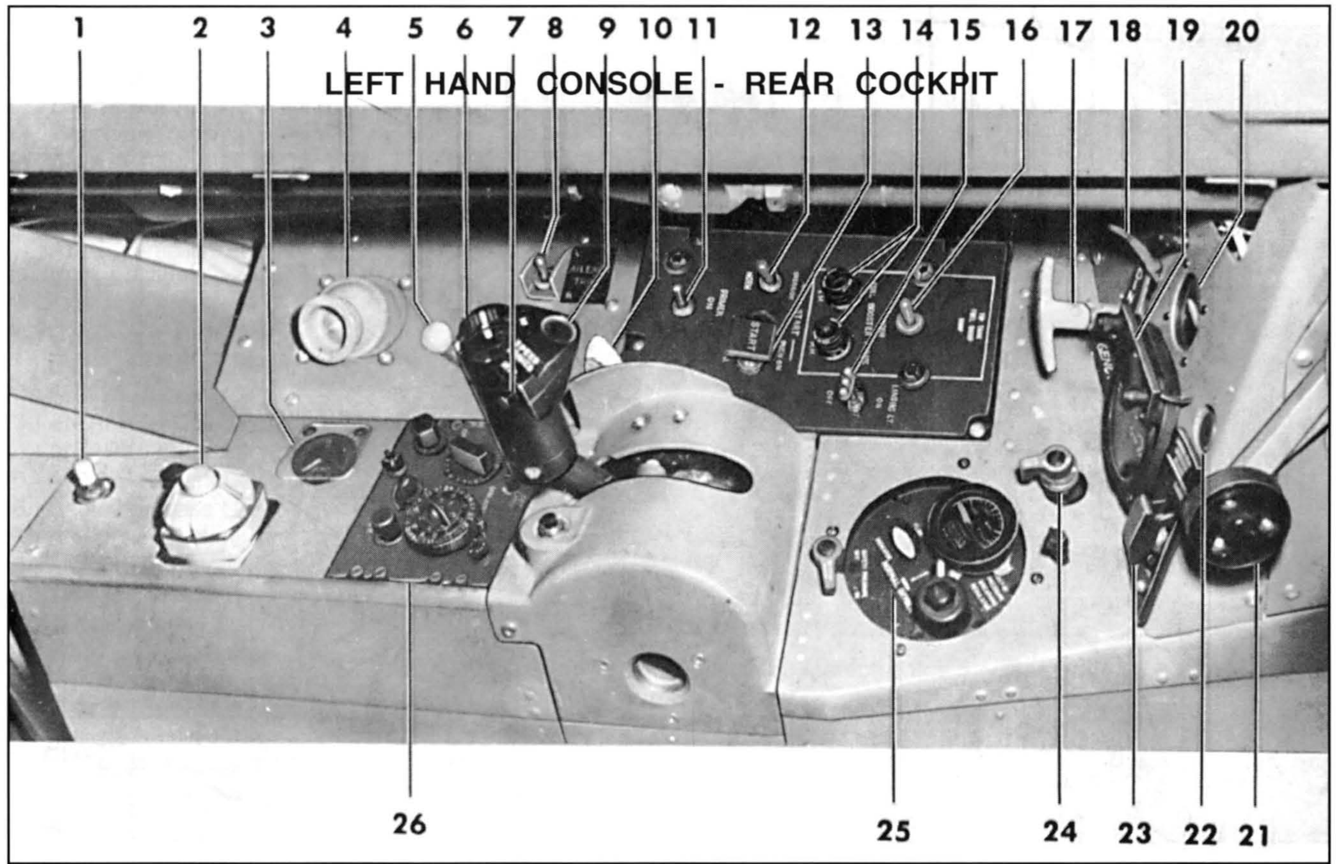
Instrument Panel - Rear Cockpit
1.) Annunciator Warning Panel
2.) Annunciator Panel Test Switch
3.) Tachometer (% RPM)
4.) AN/APN-22 Radio Altimeter Ind.
5.) Landing Gear Warning Light
6.) Altimeter
7.) Airspeed Indicator (Machmeter)
8.) Aft Overheat Warning Light
9.) B1-A Attitude Indicator
10.) Angle of Attack Indicator
11.) Turn and Slip Indicator
12.) Plenum Fire Warning Light
13.) Vertical Velocity Indicator
14.) ID/249 Cross-Pointer Indicator
15.) AN/ARN-12 Indicator Light
16.) Takeoff Checklist
17.) Fuel Quantity Indicator Switches
18.) Tell-Tale Light Indicator
19.) Fuel Flowmeter
20.) Fuel Quantity Indicator
21.) ID/250 Pointer Selector Switches
22.) Elevator Trim Indicator
23.) ID/310 Distance Indicator
24.) ID/250 Radio Magnetic Ind. (RMI)
25.) Eight-Day Clock
26.) Accelerometer
27.) Standby Compass
28.) Exhaust Temperature Indicator
29.) Landing Checklist

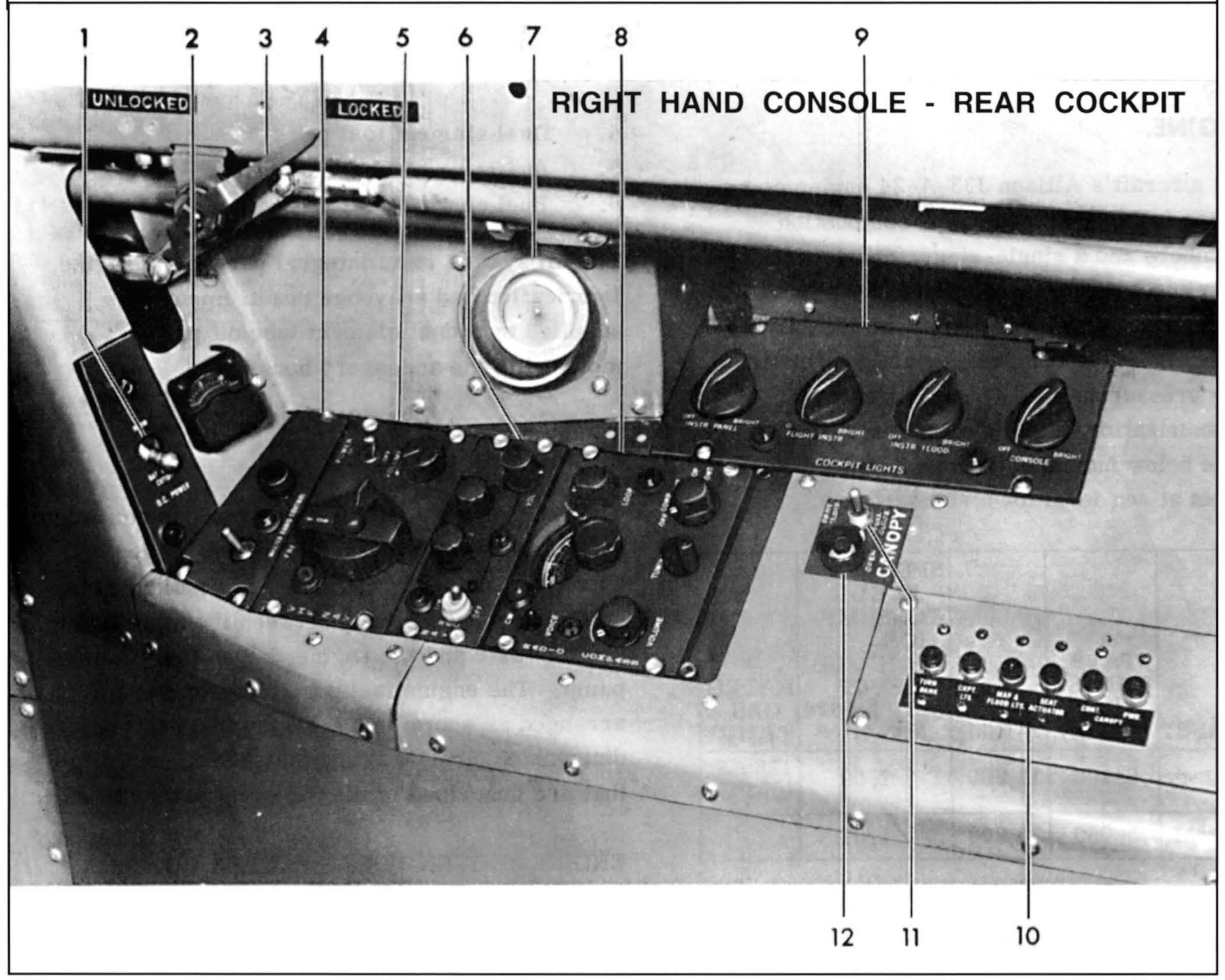
Left Hand Console - Rear Cockpit
1.) Canopy Jettison Cylinder Charging Valve
2.) G-Suit Control Valve
3.) Canopy Air Cylinder Pressure Gauge
4.) Ram Air Outlet
5.) Aileron Boost Lever
6.) Speedbrake Switch
7.) Microphone Button
8.) Aileron Trim Switch
9.) Throttle
10.) Wing Flap Lever
11.) Primer Switch
12.) Starter Override Switch
13.) Start Switch
14.) Fuel Booster Pumps Warning Lights
15.) Landing Light Switch
16.) Tip Tank Fuel Dump Switch
17.) Canopy Jettison T-Handle
18.) Emergency Landing Gear Lever
19.) Flap and Landing Gear Position Ind.
20.) Oxygen Flow Indicator
21.) Landing Gear Handle
22.) Landing Gear Downlock Release Button
23.) Main Fuel Shutoff Switch
24.) Oxygen Supply Lever
25.) Oxygen Regulator
26.) AN/ARC-27A (UHF) Receiver Control Panel

Right Hand Console - Rear Cockpit
1.) Battery - Generator Switch
2.) Loadmeter
3.) Canopy Latch Indicator
4.) Master Radio Control Panel
5.) AN/ARN-14E VHF Receiver
6.) AN/ARN-21 DME Control Panel
7.) Pressure Air Inlet
8.) AN/ARN-6 Control Panel
9.) Cockpit Lighting Panel
10.) Circuit Breaker Panel
11.) Canopy Close Switch
12.) Canopy Open Switch

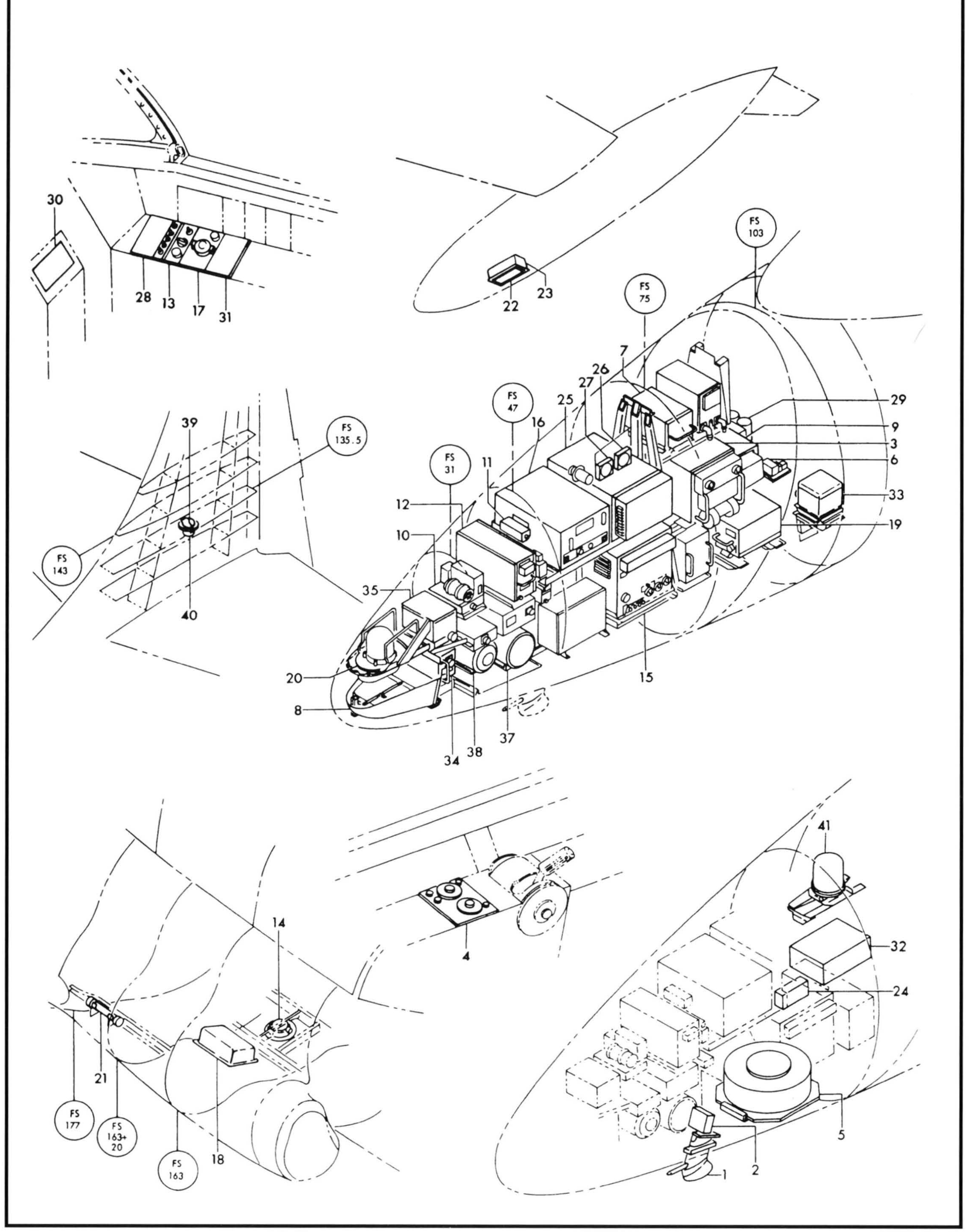
Below, aft instrument panel on T-1A 144200 at the Pima Air & Space Museum. (Doug Slowiak)







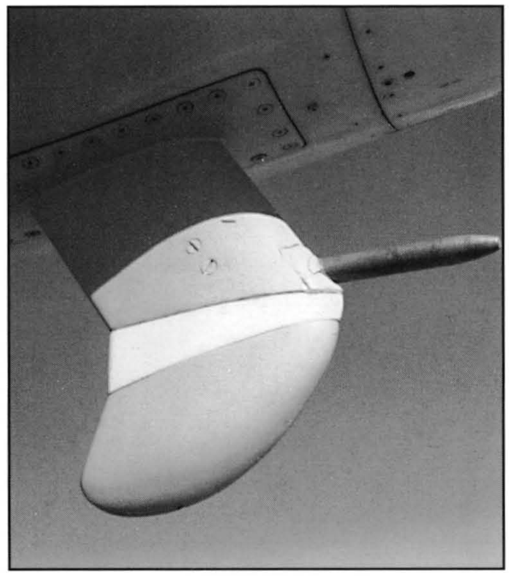
ELECTRONIC SYSTEMS

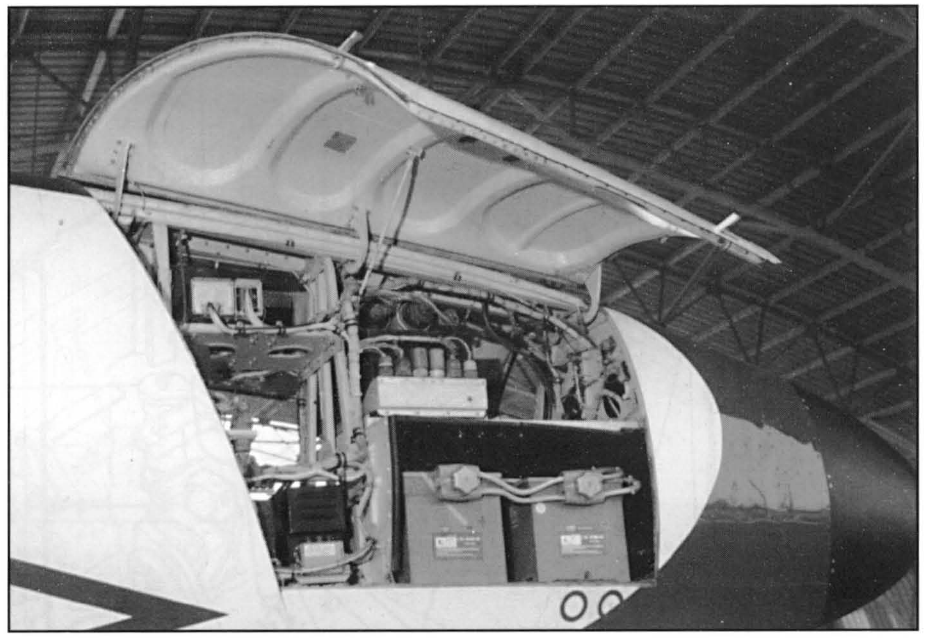


Electronic Systems

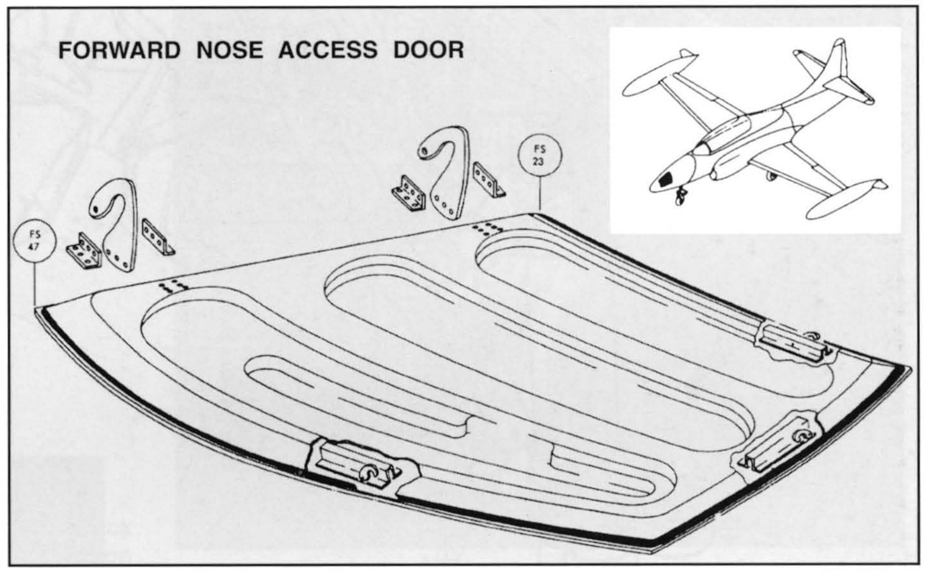
1.) AN/ARC27 Antenna/Pitot Mast
2.) Band Filter
3.) Receiver-Transmitter
4.) AN/ARC27 & ARA25 Controls
5.) ARA25 Antenna
6.) ARA25 Relay Solenoid
7.) ARA25 Amplifier
8.) VOR & Glide Scope Antenna
9.) ARN14C Receiver
10.) Dynamotor
11.) High-Low Pass Filter
12.) ARN18 Receiver
13.) AN/ARN14 Control Panel
14.) AN/APX6 Antenna
15.) APX6 Receiver-Transmitter
16.) Radio compass Unit
17.) AN/APN6 Controls
18.) AN/ARN12 Antenna
19.) AN/ARN12 Receiver
20.) ARN6 Antenna
21.) Silica gel Dehydrator
22.) APN22 Housing Assembly
23.) APN22 Receiver-Transmitter
24.) APN22 Amplifier
25.) ARN21 Receiver-Transmitter
26-27.) Indicator
28.) ARN21 Controls
29.) AIC10 Dynamotor
30.) AIC10 Controls
31.) APA89 Controls
32.) K4 Vertical Gyro Controls
33.) Vertical Gyro Indicator Amplifier
34.) B7A Auto-Pilot Amplifier
35.) Type A2 Single Channel Amplifier
37-38.) 250 Volt Inverter Assembly
39.) Remote Compass Compensator
40.) Remote Compass Unstabled Transmitter
41.) Directional Gyro Control

Below, AN/ARC27 Antenna/Pitot Mast. (Doug Slowiak)

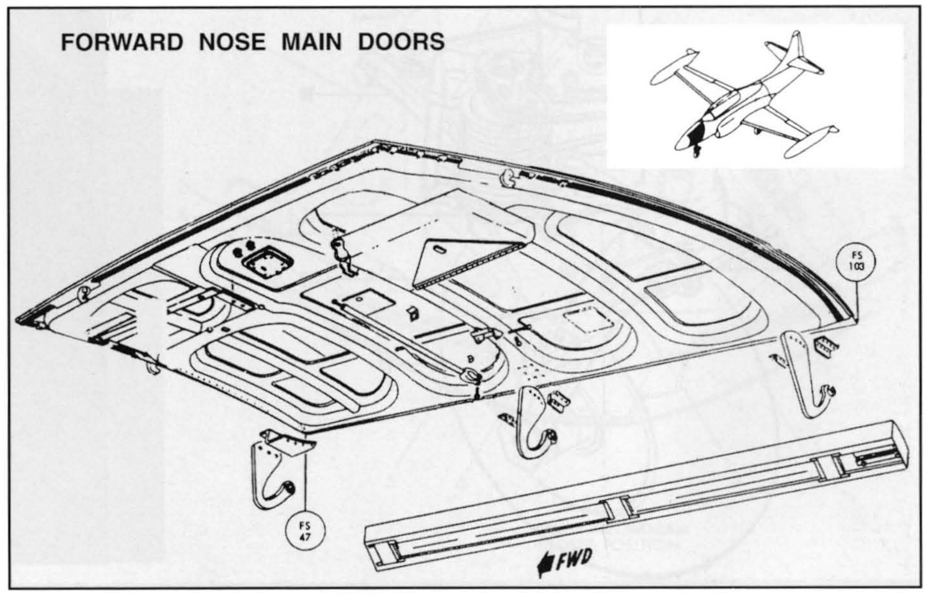




Civilian T-1A, BuNo 144735, electronics bay, see page 66 & 67 for more detailed photos. (Doug Slowiak)

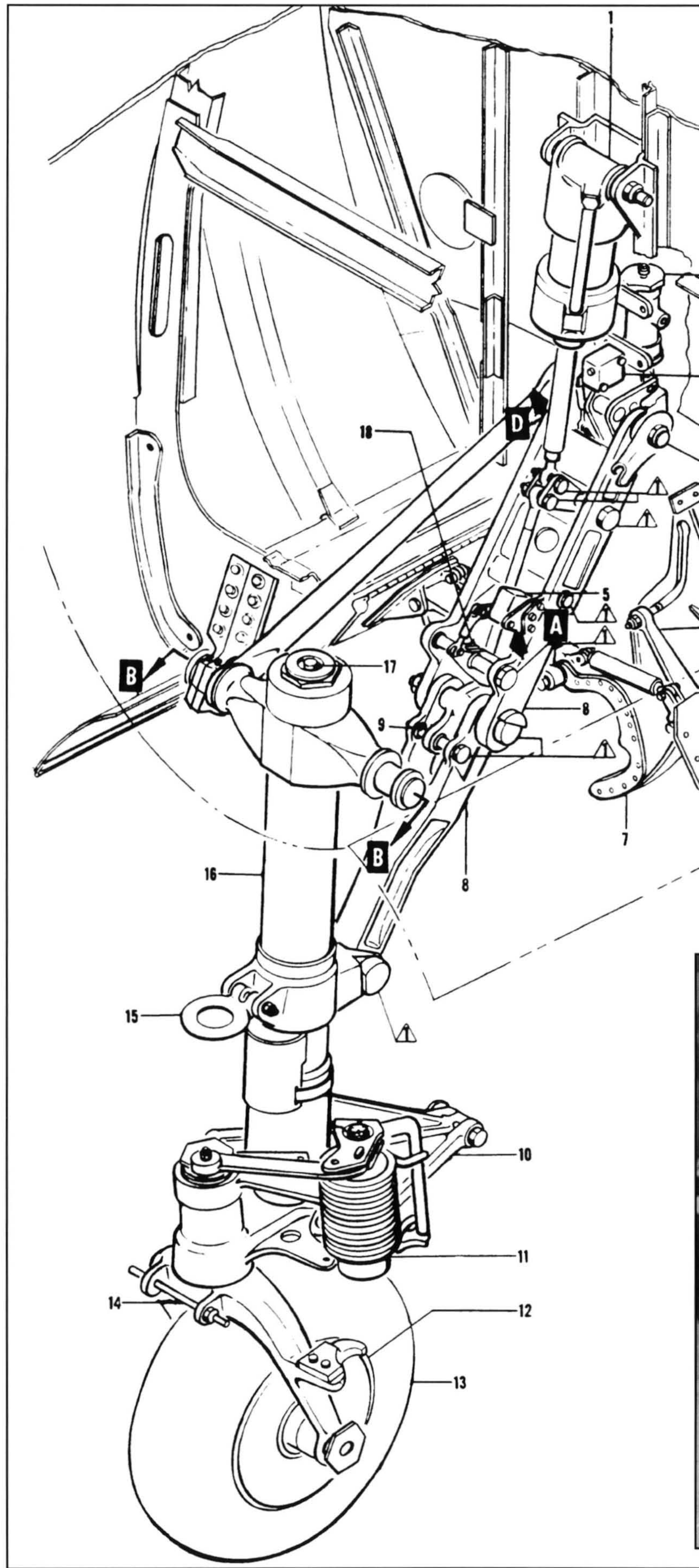


FORWARD NOSE ACCESS DOOR



FORWARD NOSE MAIN DOORS

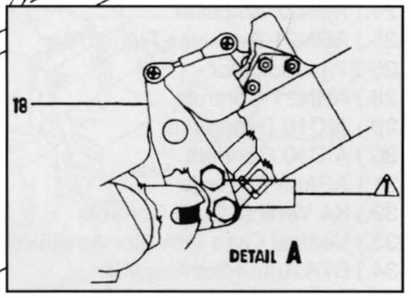
NOSE GEAR INSTALLATION



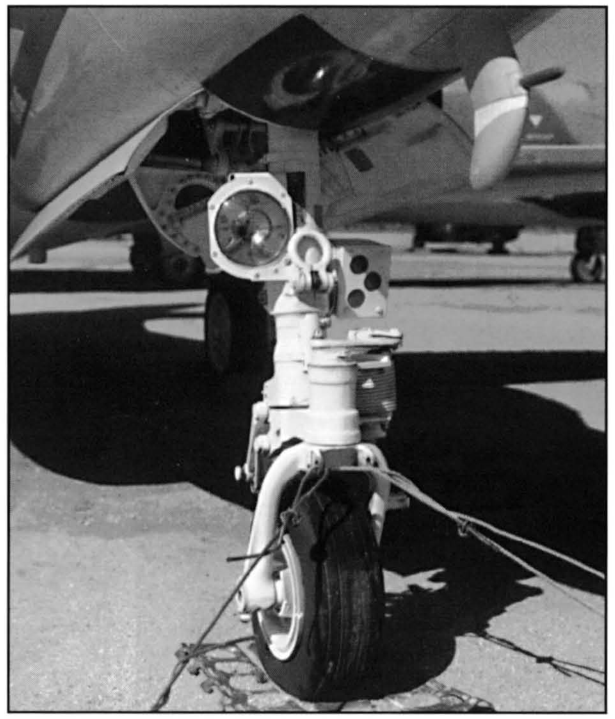
1 ACTUATING CYLINDER
2 F.S. 103 BULKHEAD
3 UPLOCK CYLINDER
4 UPLOCK SWITCH
5 DOWNLOCK SWITCH
6 NOSE GEAR DOOR
7 DOOR OPERATING MECHANISM
8 DRAG STRUT AND DOWNLOCK MECHANISM
9 DOWNLOCK CAM
10 TORQUE ARM
11 SHIMMY DAMPER & WHEEL CENTERING MECHANISM
12 WHEEL ASSEMBLY
13 18 x 5.5 12 PLY RATING TYPE II TIRE
14 STEERING LUC
15 MOORING LUG
16 SHOCK STRUT
17 FILLER PLUG
18 DOWNLOCK LATCH

NOTE:

⚠1 THESE PARTS TO BE FINGER TIGHT

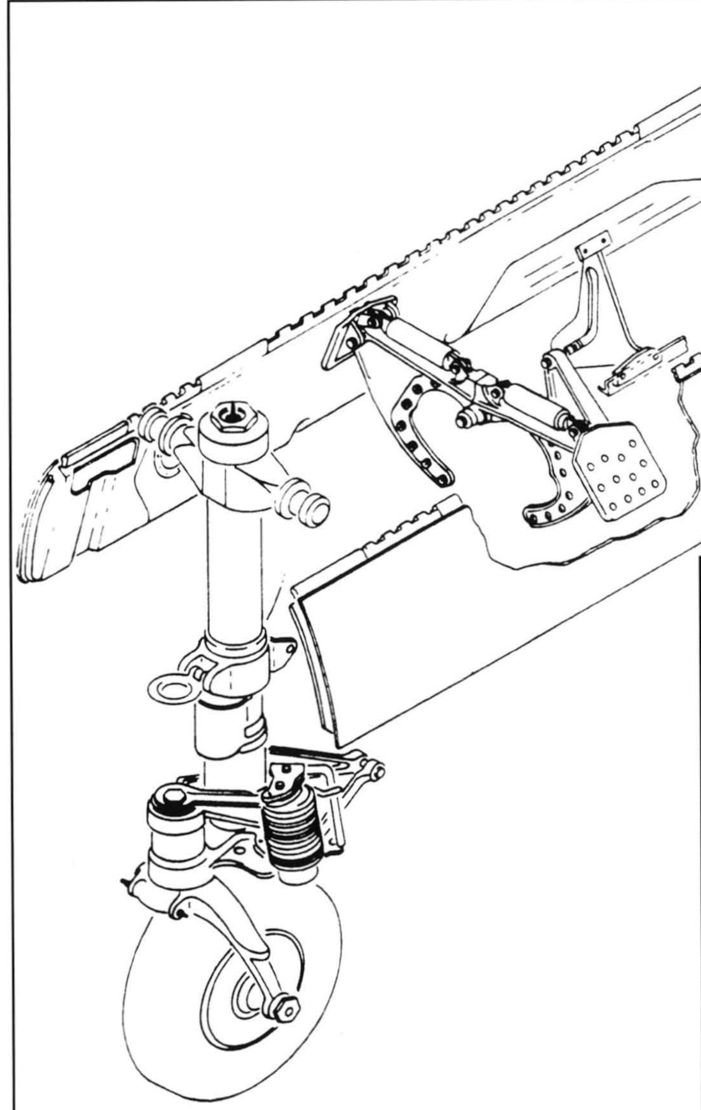


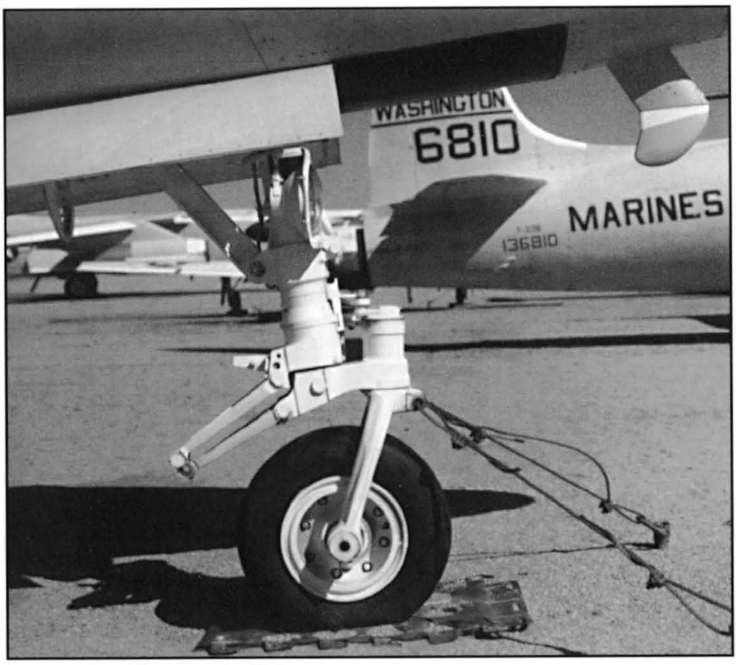
Below, head on view of nose gear with landing light (left) and approach lights (right) installed. (Doug Slowiak)



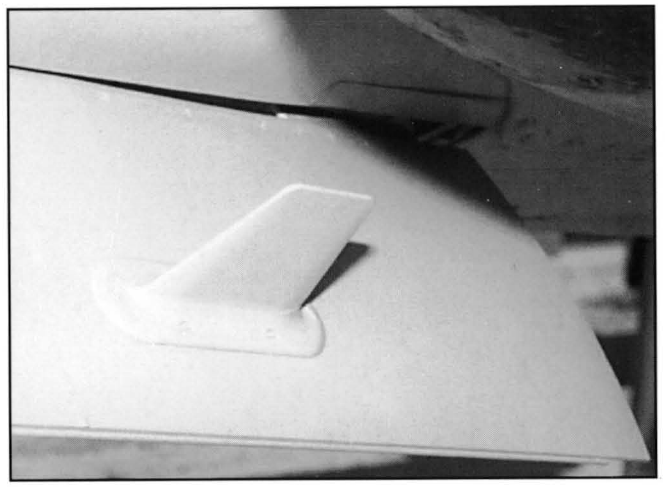
NOSE GEAR DOORS AND DOOR MECHANISM

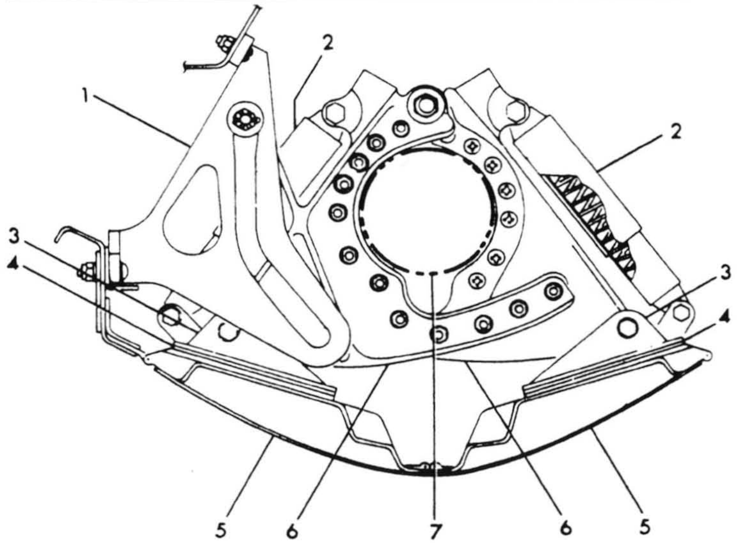
1.) Stop Bracket
2.) Spring Loaded Cartridge
3.) Door Bracket
4.) Shims
5.) Door
6.) Operating Cam
7.) Nose Shock Strut





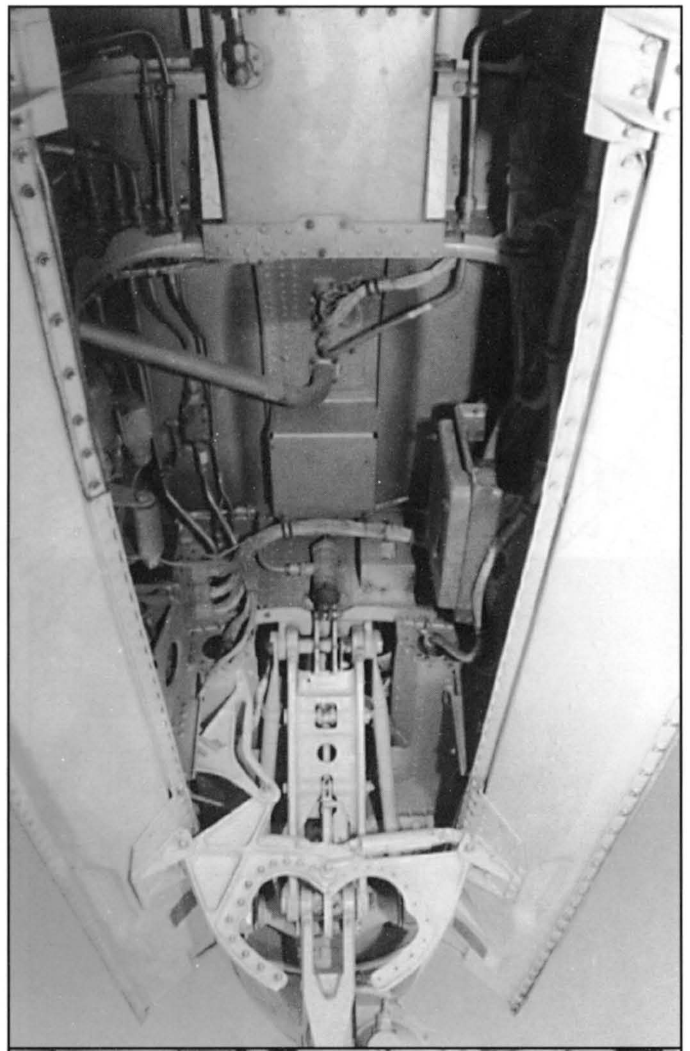
Above right, nose gear door/gear relationship. Black area forward of the gear doors indicates the location of the ARA25 antenna. (Doug Slowiak) Below, non-standard blade antenna located at the aft end of the left-hand nose gear door. (Doug Slowiak)

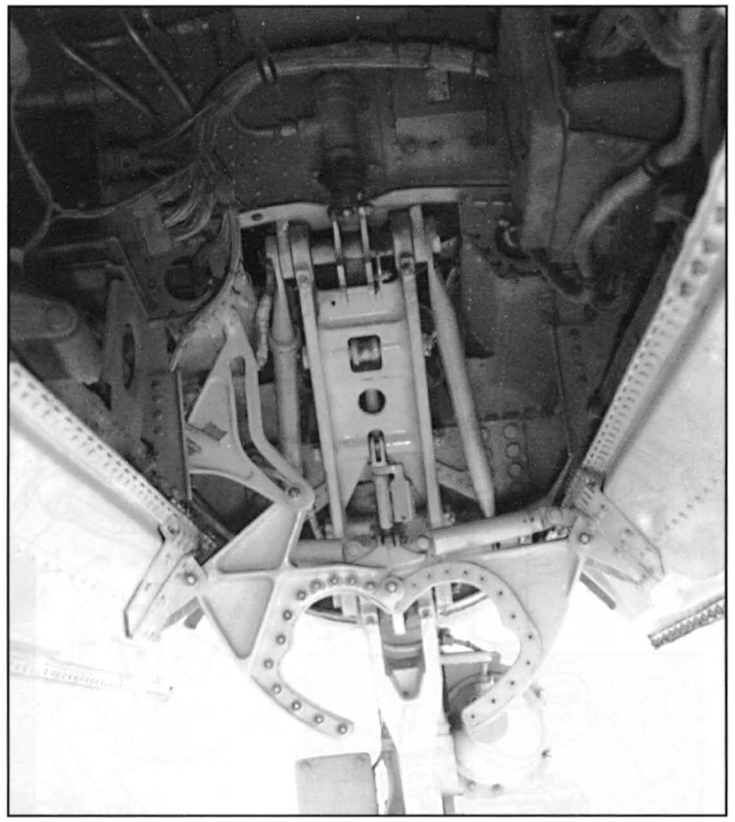




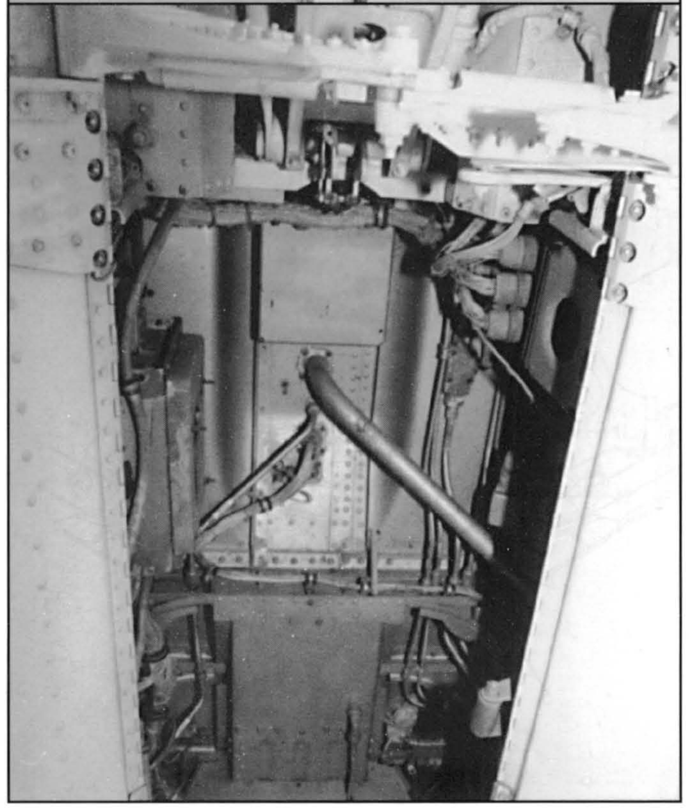
DOOR MECHANISM
CLOSED POSITION

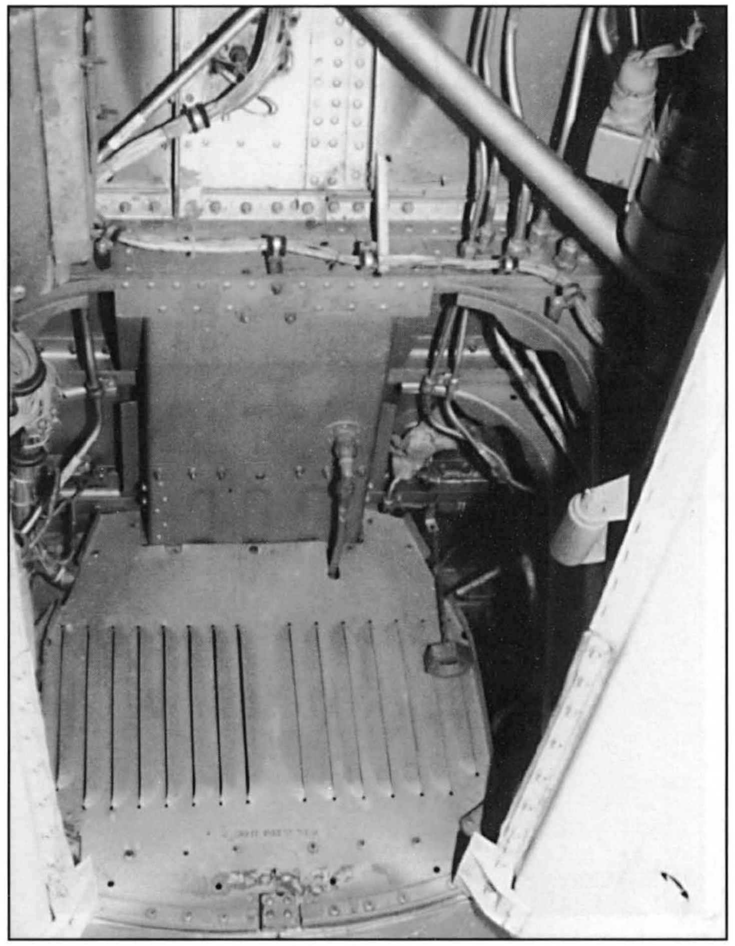
NOSE WHEEL WELL DETAILS



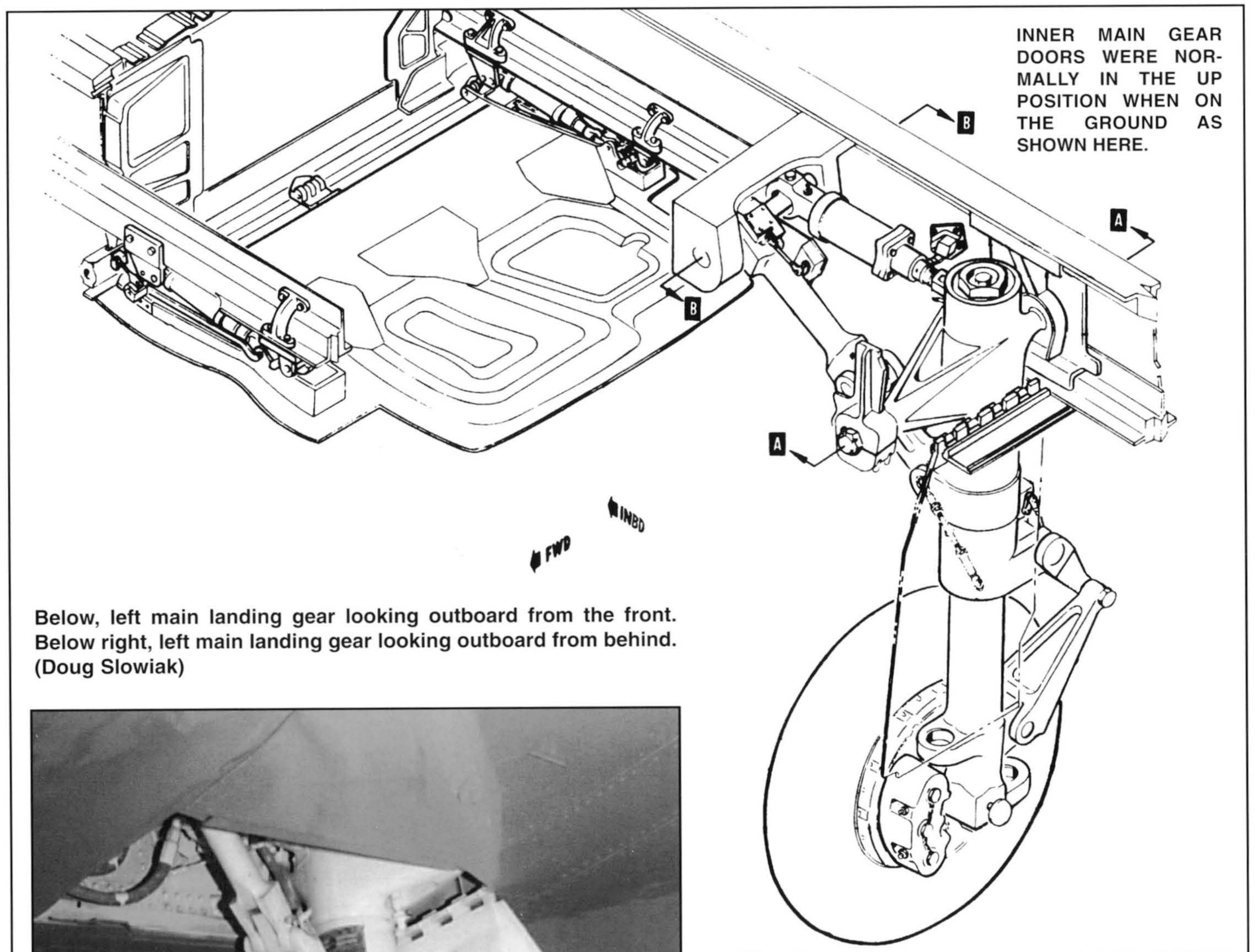


Above and at left, nose gear well looking forward. Below and below left, nose gear well looking aft. (Doug Slowiak)



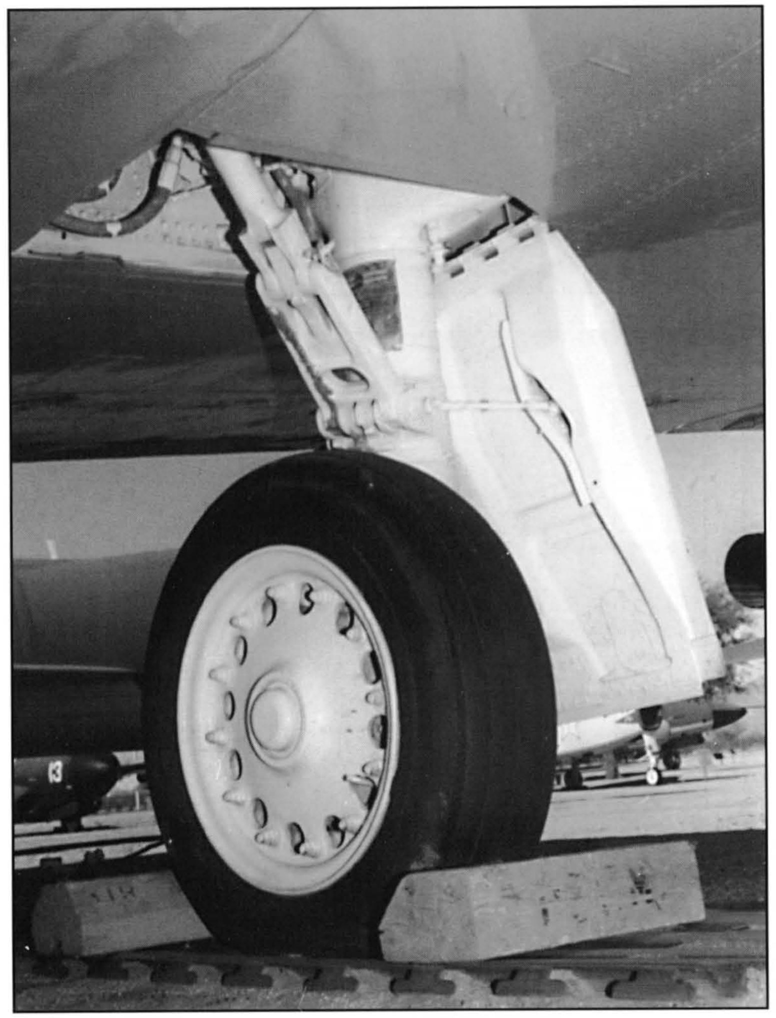


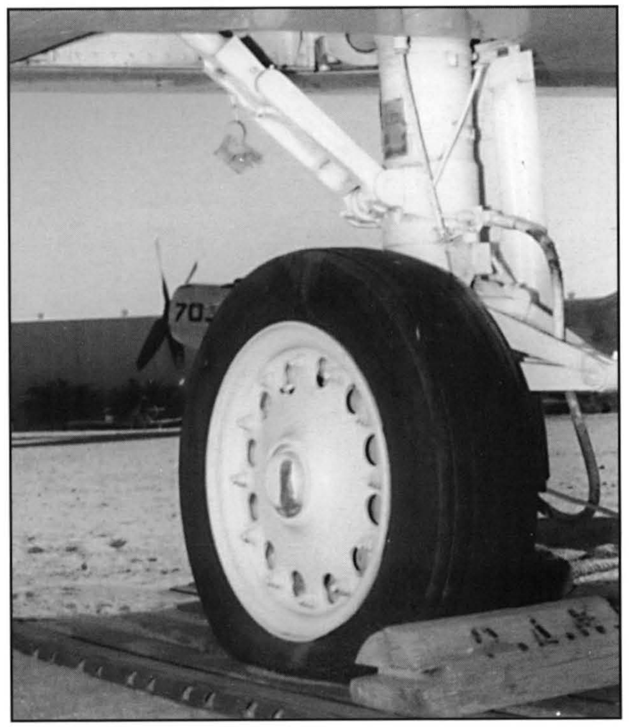
LEFT MAIN LANDING GEAR



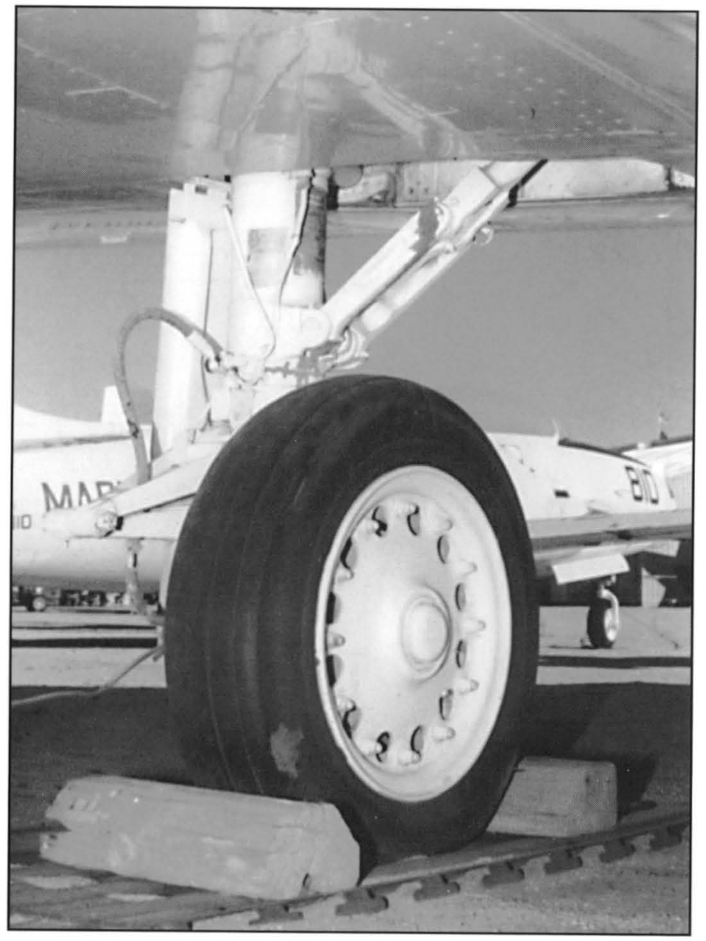
INNER MAIN GEAR DOORS WERE NORMALLY IN THE UP POSITION WHEN ON THE GROUND AS SHOWN HERE.

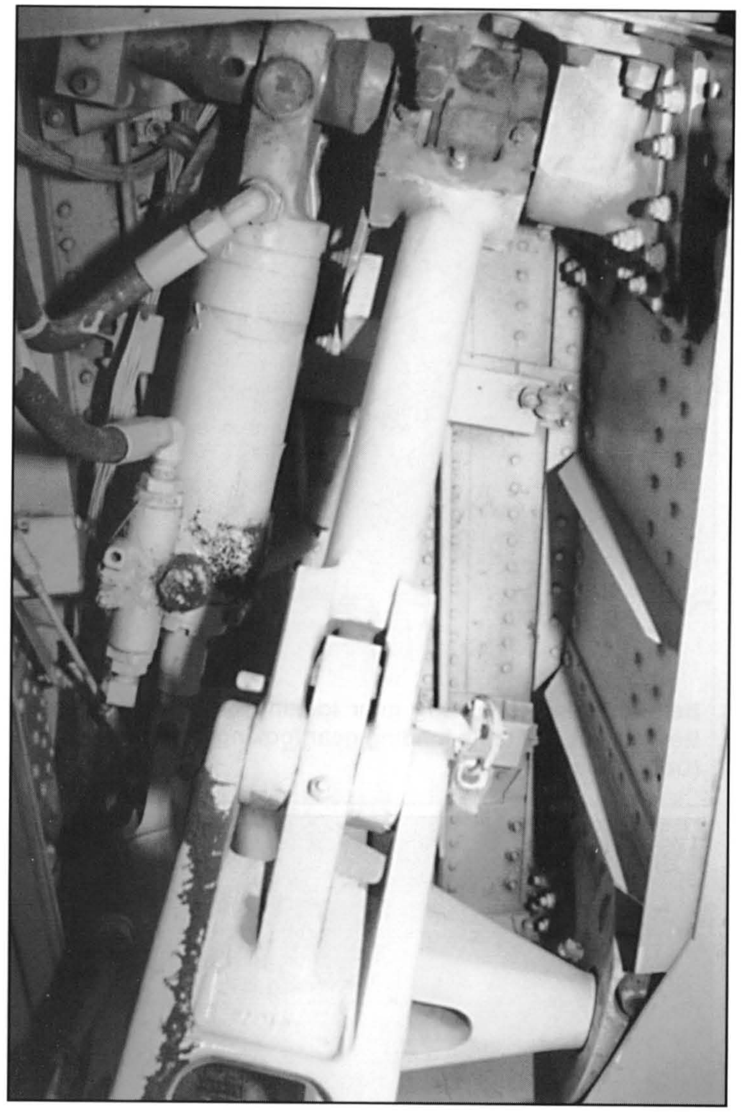
Below, left main landing gear looking outboard from the front. Below right, left main landing gear looking outboard from behind. (Doug Slowiak)



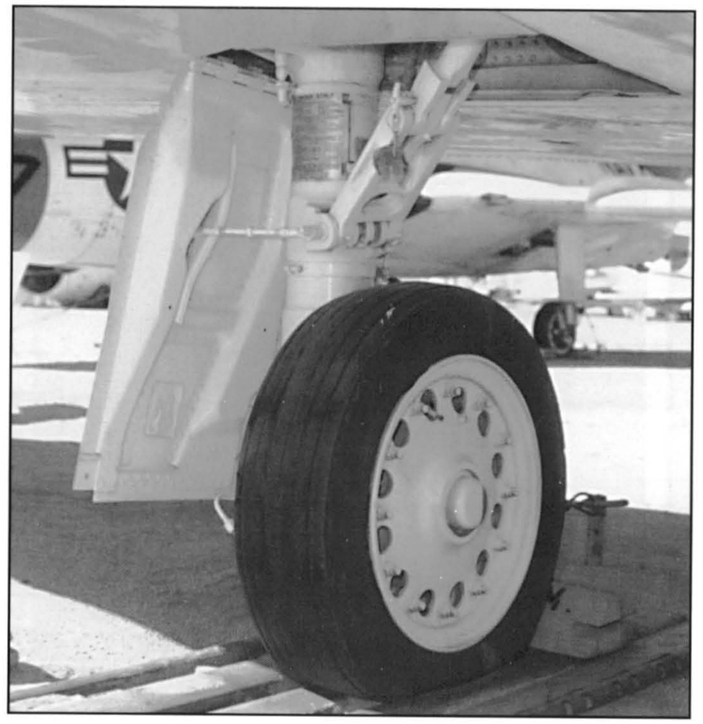


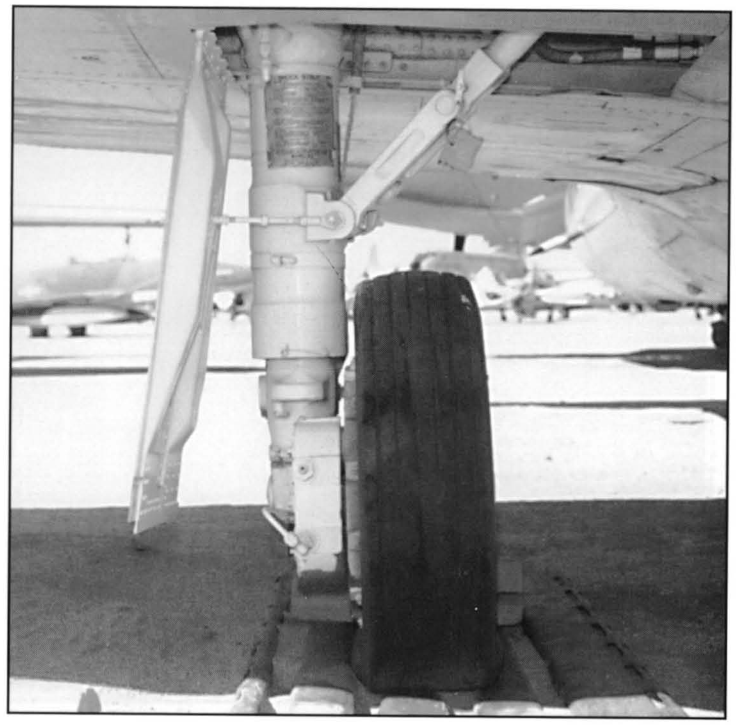
RIGHT MAIN LANDING GEAR





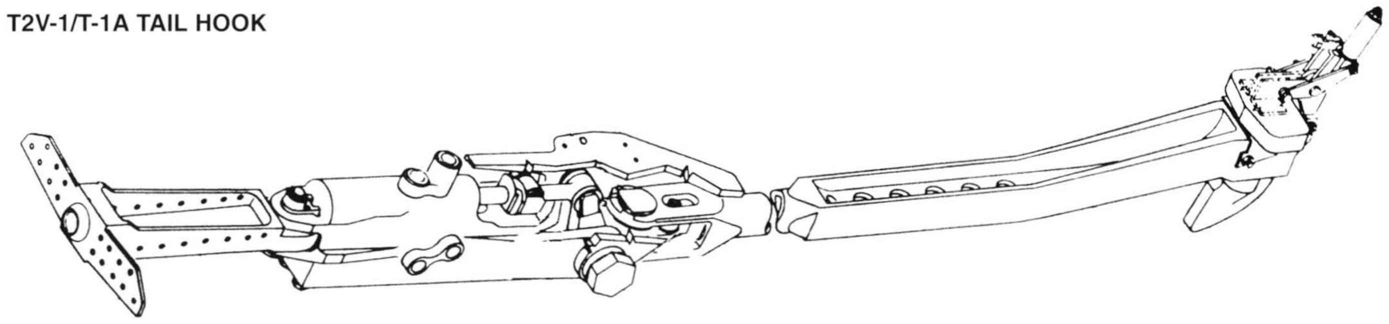
Above, right main gear looking outboard from behind. Below, right main gear looking outboard from the front. Below right, right main gear from the front. At right, main gear well. The wing leading edge would be to the right. (Doug Slowiak)



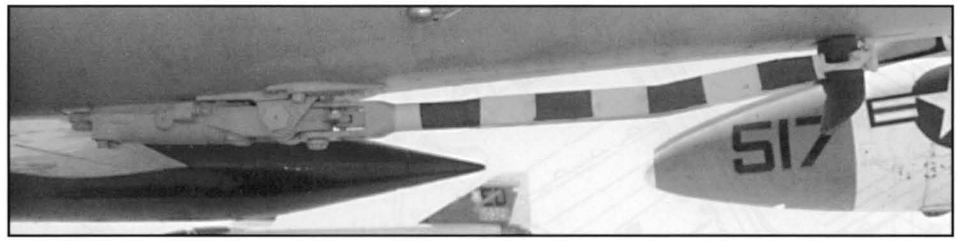


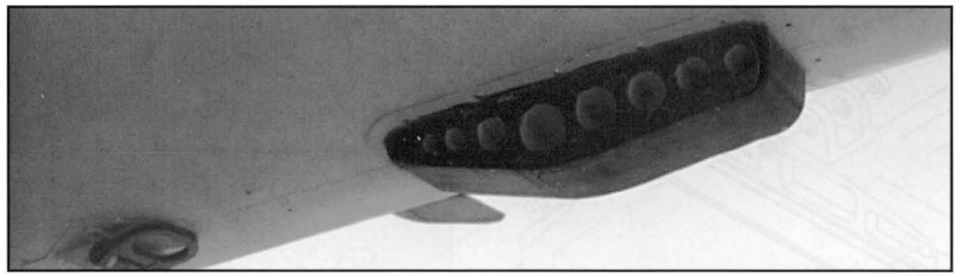
ARRESTING GEAR

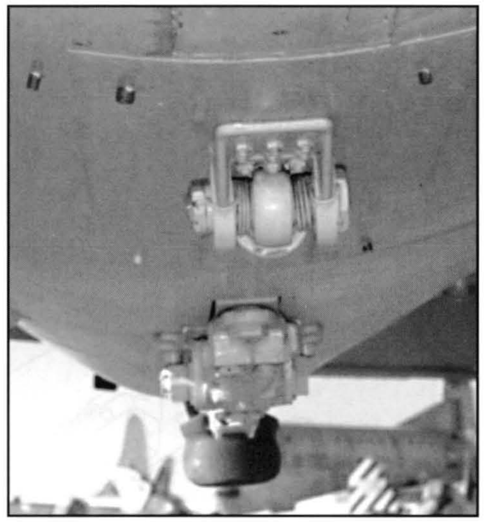
T2V-1/T-1A TAIL HOOK



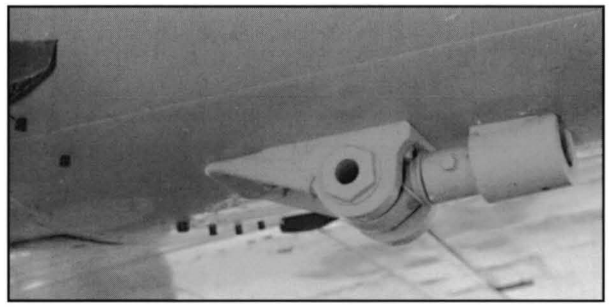
Below, T-1A Tail Hook. Below middle, rubber tail skid. At right below, belly view looking aft with the catapult hold-back fitting in the foreground and the tail hook in the background. (Doug Slowiak)

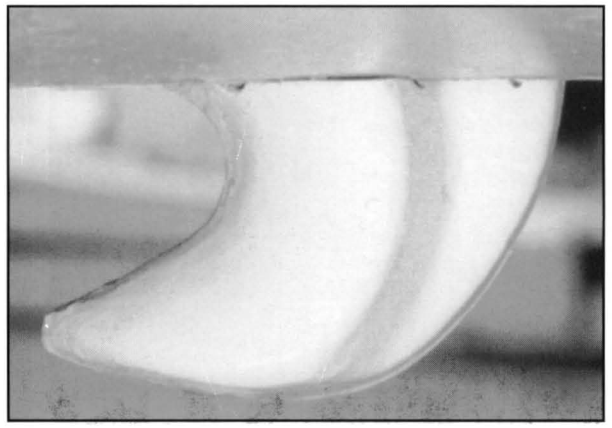


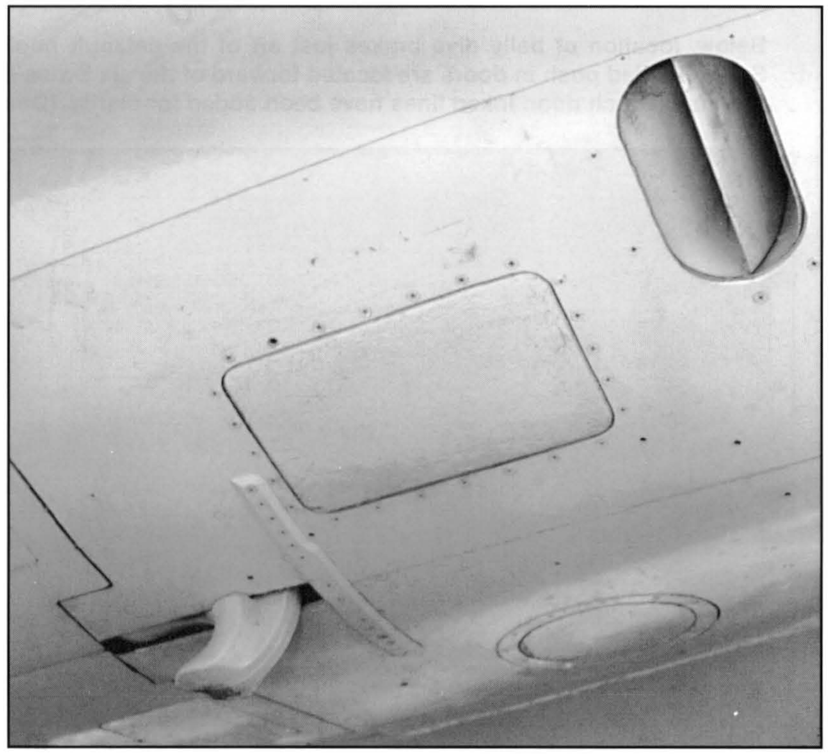




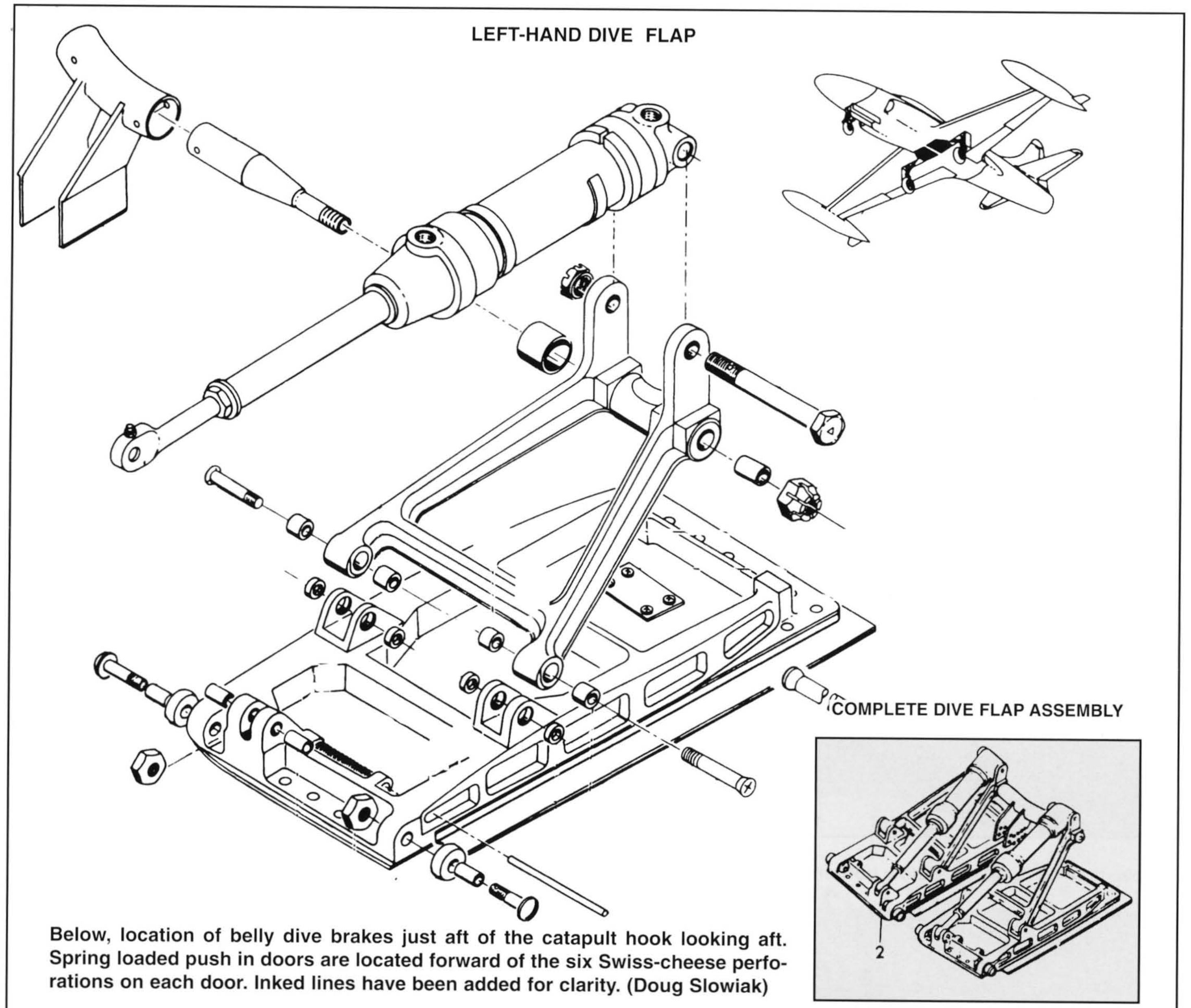
Below, hold-back fitting. Below bottom, catapult hook. Below, the catapult hook was located forward of the dive brakes.



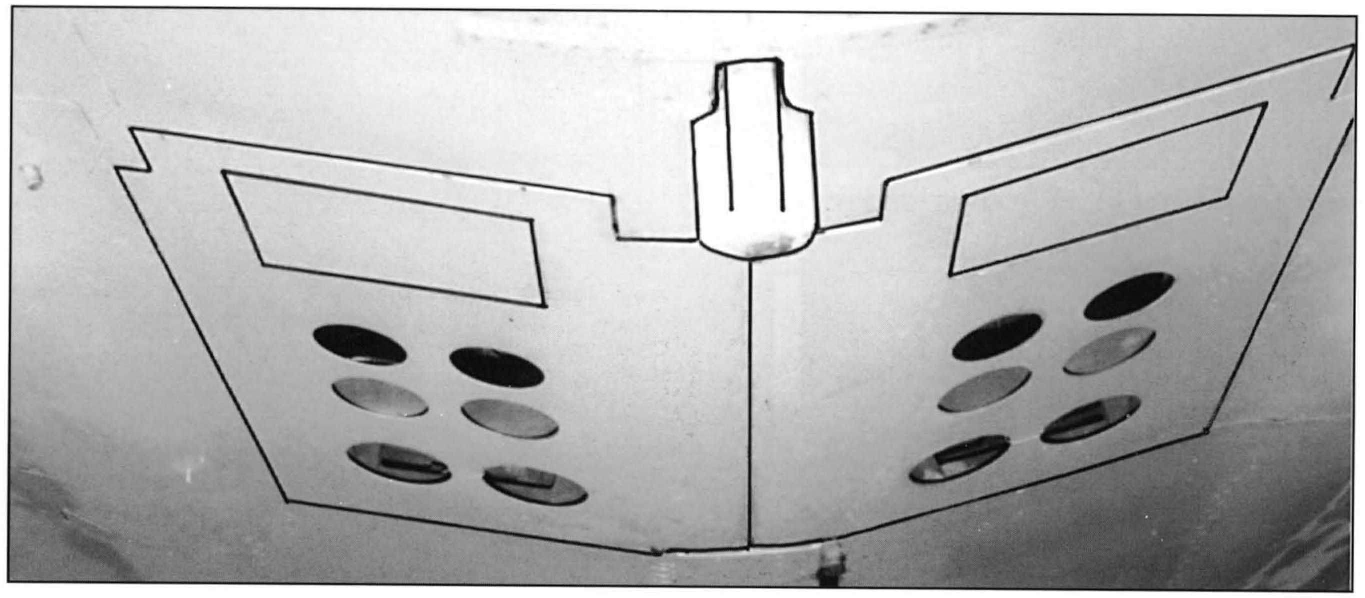




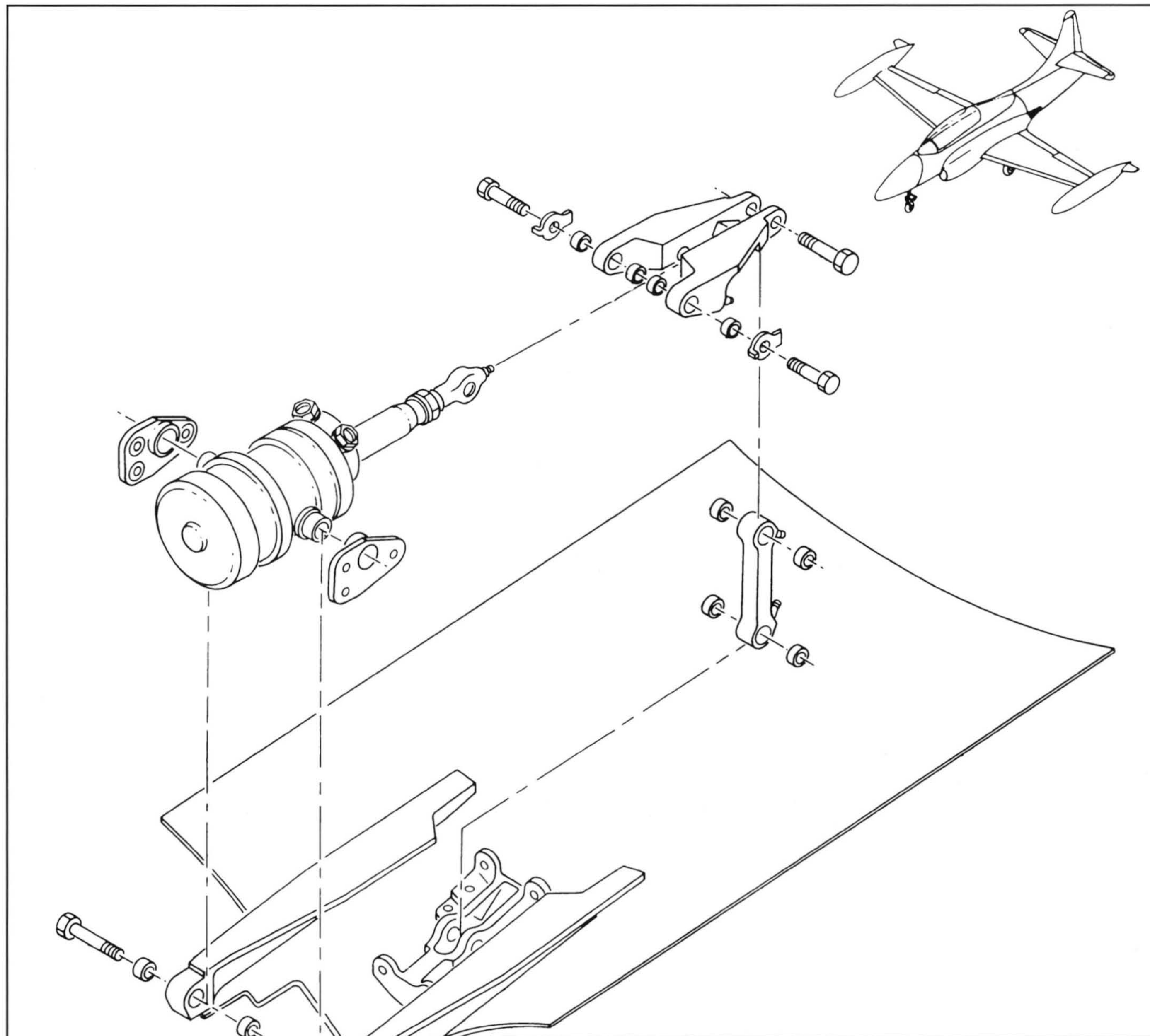
BELLY DIVE FLAP ASSEMBLY



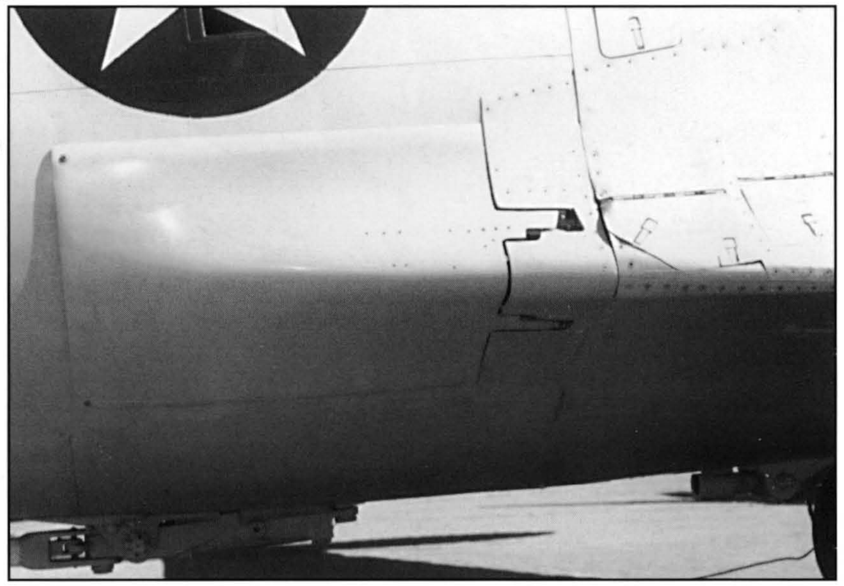
Below, location of belly dive brakes just aft of the catapult hook looking aft. Spring loaded push in doors are located forward of the six Swiss-cheese perforations on each door. Inked lines have been added for clarity. (Doug Slowiak)



AFT SPEED BRAKE ASSEMBLY



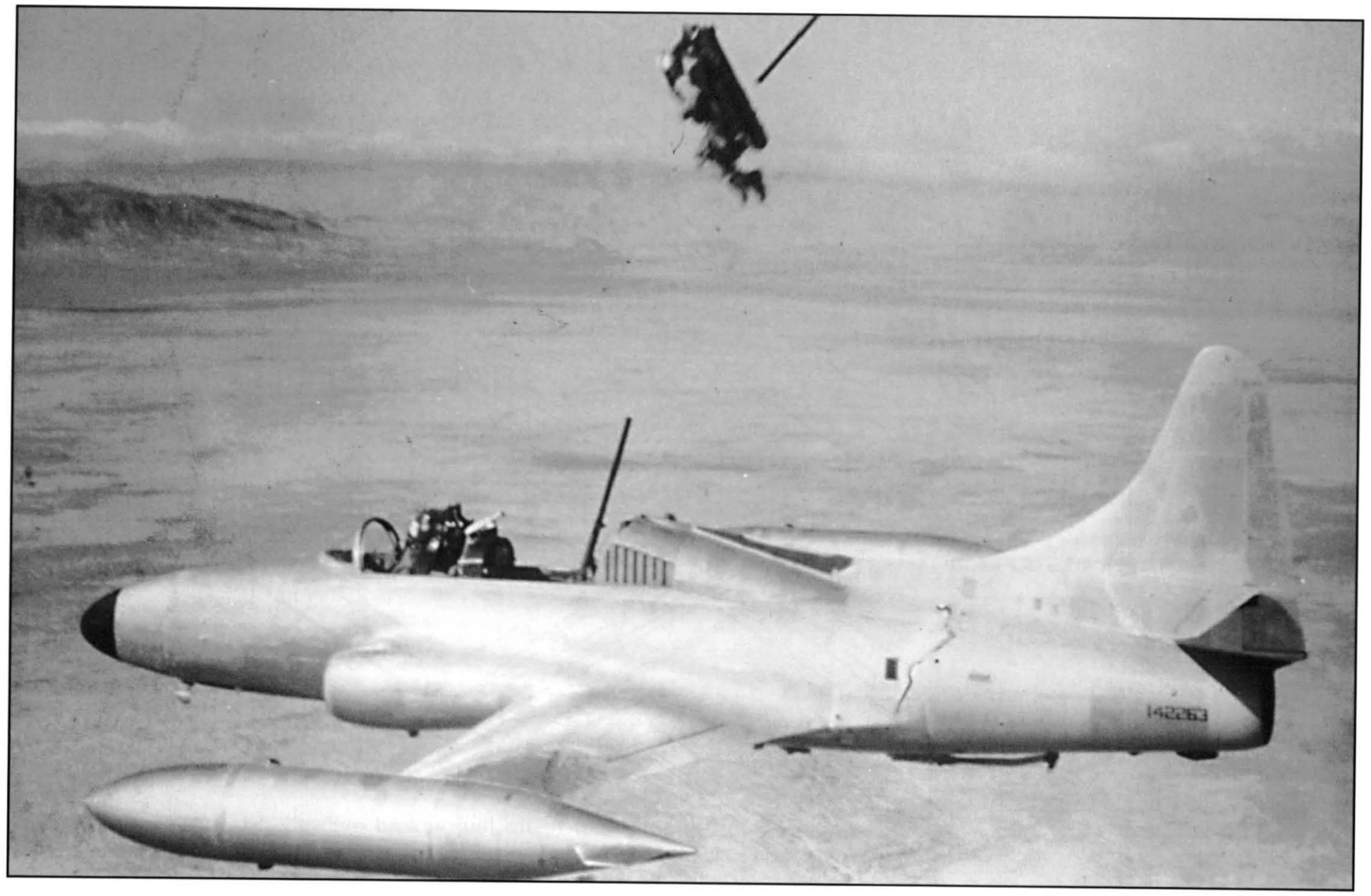
At right, the very simply designed fuselage mounted speed brakes were installed when the original T-33 style belly brakes proved ineffective. They were externally mounted with no recess to fit into. The fuselage mounted speed brakes and the belly mounted dive brakes could be opened at any speed or in any increment up to full extension. (Doug Slowiak)

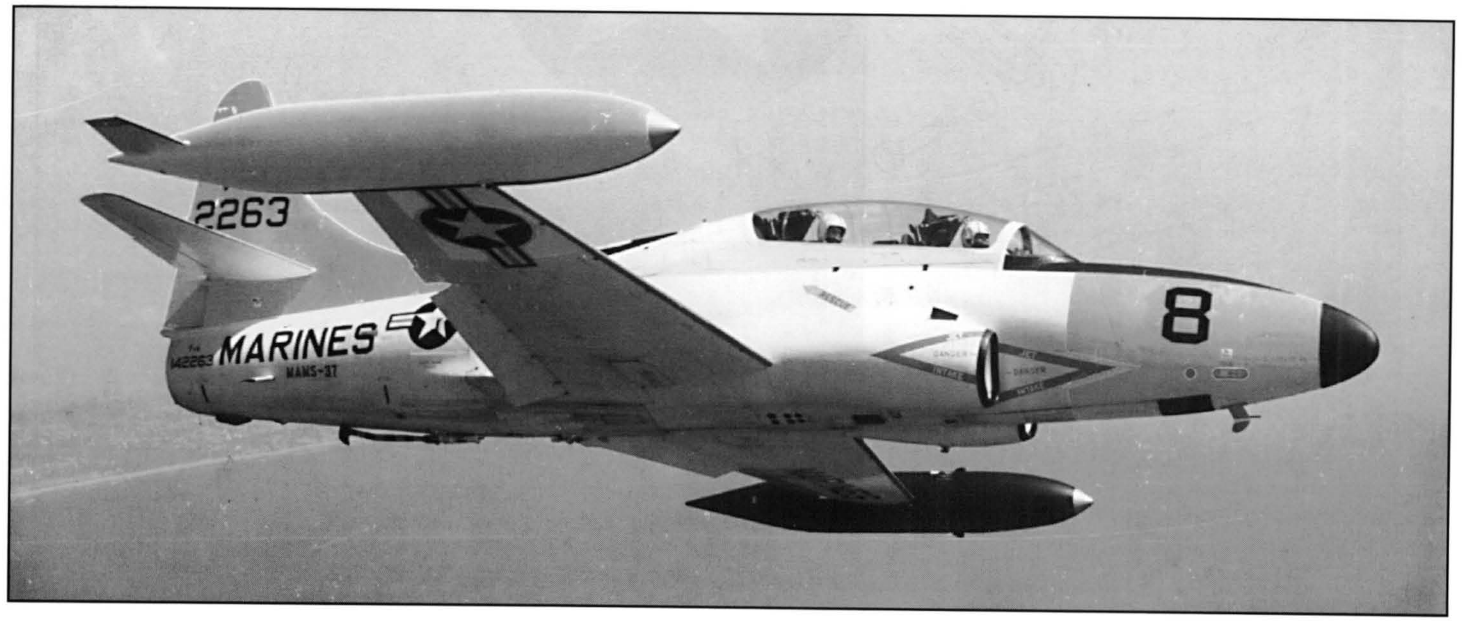


SEASTARS BY THE NUMBERS

Outside of the Seastar's short, but intensive, usage with BTG-9, and its long usage in small numbers at VT-10, it was rare to find more than two or three assigned to a service squadron or Naval or Marine Air Station. It lived an extremely useful life as a proficiency and navigation trainer, and was seen in many varied and colorful paint schemes. This portion of the book will look at many of these varied uses and schemes in BuNo order, although not all BuNos are illustrated.

Below, natural metal 142263 on 1-20-61 was on bailment from Lockheed for ejection seat testing at NAS El Centro. The pilot was LT Geo W. Ready. (Bob Lawson) Bottom, 142263 in 1964 while assigned to MARS-37 (tail code QF). See the front cover color scheme. (USMC via Robert Dorr)





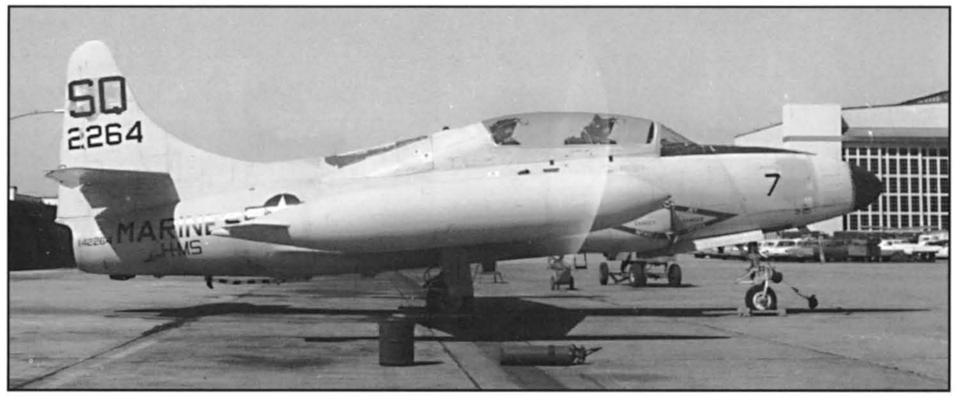
Above right, T-1A 142264 of H&MS-?? at NAS Alameda on 21 October 1966. Aircraft is overall grey. (Larry Smalley via Swisher)

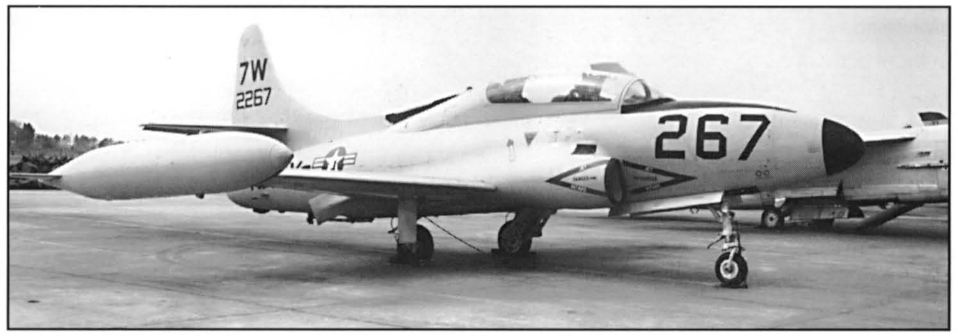
At right, T-1A 144267 assigned to NAS Willow Grove in overall grey. (Nick Williams)

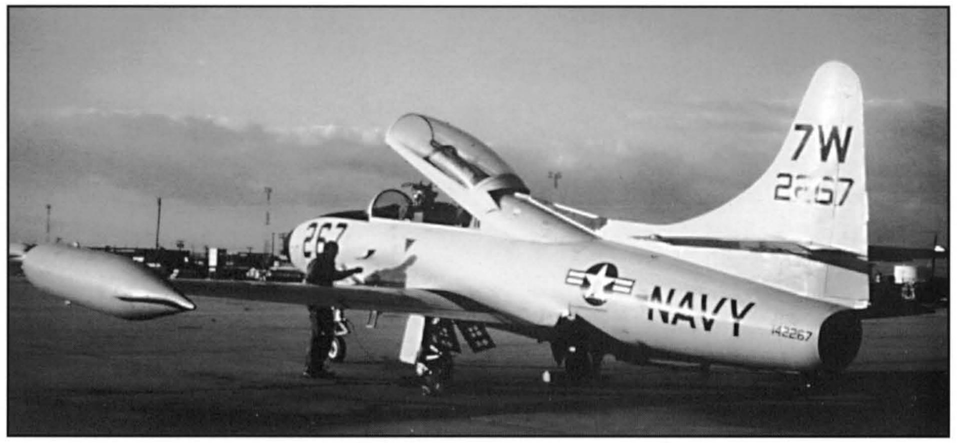
At right, dramatic early morning photo of 144267 in December 1968. Note Swiss cheese holes in the belly finger-style dive brakes. Prior to assignment to Willow Grove, 144267 was assigned to NATC, NAS Anacostia, and MARS-37 later MAMS-37 at MCAS El Toro. (Don Bishop via Doug Slowiak)

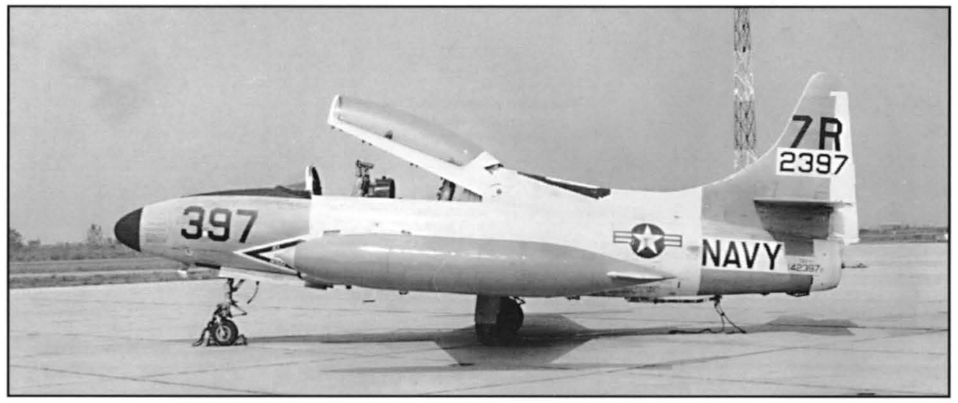
At right, T2V-1 142397 was assigned to Floyd Bennett Field at NAS New York on 29 August 1962. Aircraft was overall white and da-glo red-orange. Prior to 1962, 142397 was assigned to NATC, BTG-9 at NAS Pensacola, and NAS Oceana. In October 1964, it was assigned to NAS Memphis and was stricken in July 1965. (Roger Besecker via Robert Dorr)

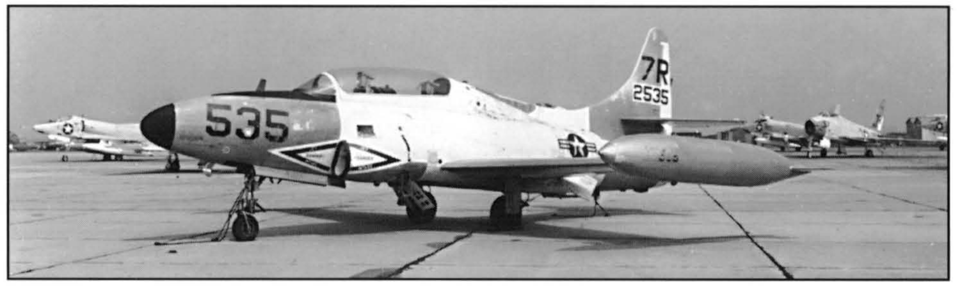
At right bottom, heavily weathered T-1A 142535 at NAS New York on 29 August 1962. Note non-standard blade antenna forward of the windscreen and the last 3-digits of the BuNo repeated on the nose and tip tanks. Reserve A-4Bs and FJ-4Bs can be seen in the background. (via Lionel Paul)

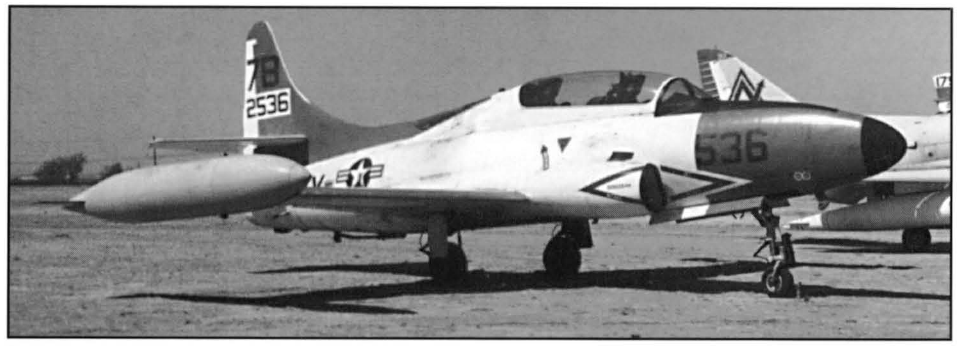


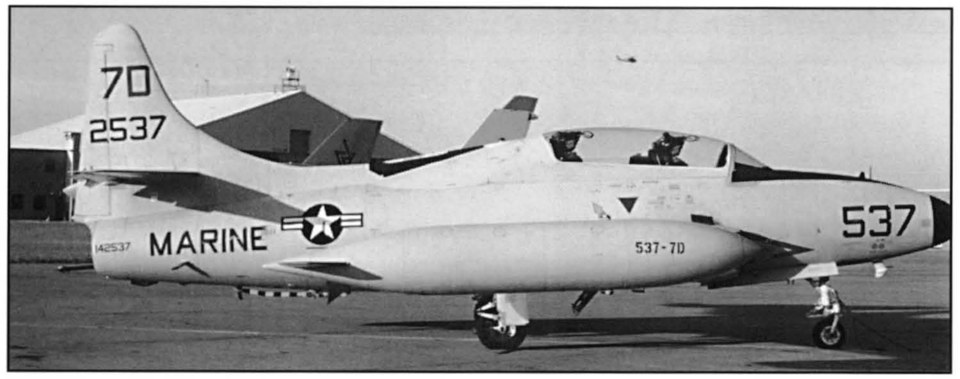


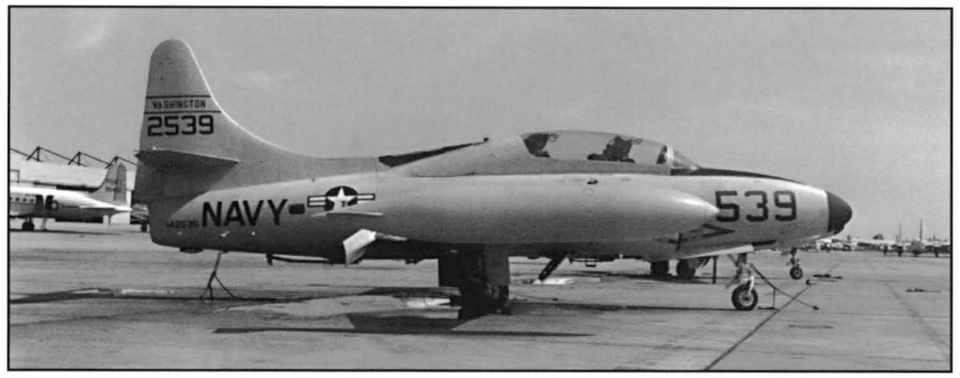


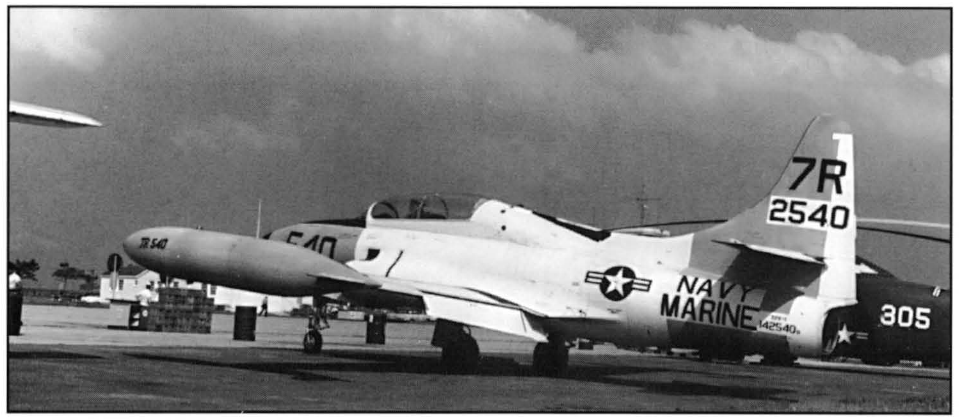


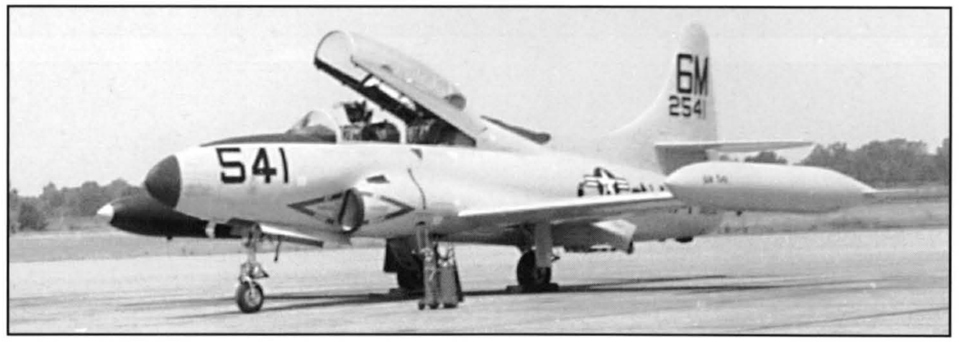












At left above, T-1A 142536 from NAS Atlanta, tail code 7B on 23 April 1971. The aircraft is overall white and dark red, but the tip tanks are faded da-glo red-orange. 142536 was first assigned to NAS Corpus Christi. This was followed by assignments at Edwards AFB, NATC, BTG-9, NAS Dallas and finally NAS Atlanta. (B. Stewart via Doug Slowiak)

Above left, T-1A 142537 finished out its career at NAS Dallas in this all grey scheme. Prior assignments were NAS Corpus Christi, NATC, Lockheed, BTG-9, NAS Memphis, and VT-10. (via Kaston)

At left, T-1A 142539 in all grey scheme on 2 June 1967. For a period of time, a large number of Seastars were assigned to NAF Washington so that Naval aviators assigned in and around the capitol could maintain their flight pay. The aircraft was assigned to NATC and NAS Quonset Point prior to its duty at Washington. (William Swisher)

At left, T2V-1 142540 at NAS New York on 3 July 1960. The rear fuselage carries the NAVY/MARINE designation commonly seen on Naval Reserve aircraft that were shared by Navy and Marine Reserve units during the 1960s. 142540 was previously assigned to BTG-9. (O'Dell via Fred Roos)

At bottom left, T-1A 142541 at NAS Memphis in 1966. Aircraft was overall grey with the Memphis 6M tail code. (via Nick Williams)

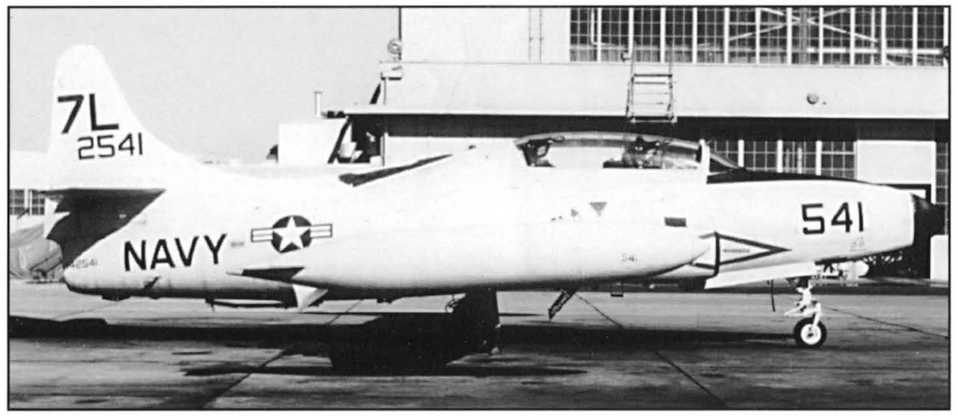
At right top, 142541 at NAS Los Alamitos was on hand in 1971 when the Air Station was closed as a Naval base. The aircraft was overall grey. (via Burger)

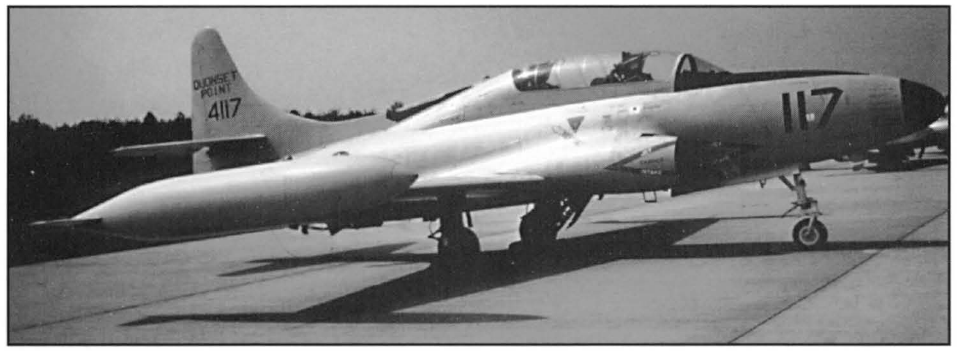
Above right, all grey T-1A 144117 on 18 September 1965 while assigned to NAS Quonset Point. (Richard Sullivan via Doug Slowiak)

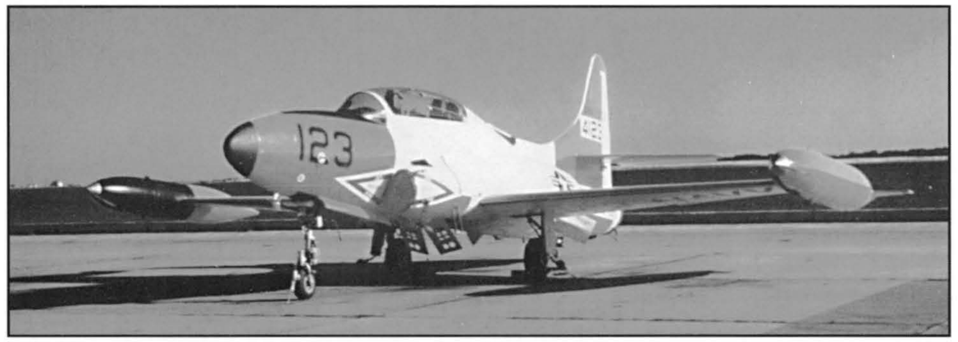
At right, T-1A 144123 when assigned to NAS Pensacola. The aircraft is overall white with red-orange da-glo. (Stan Wyckoff via Craig Kaston)

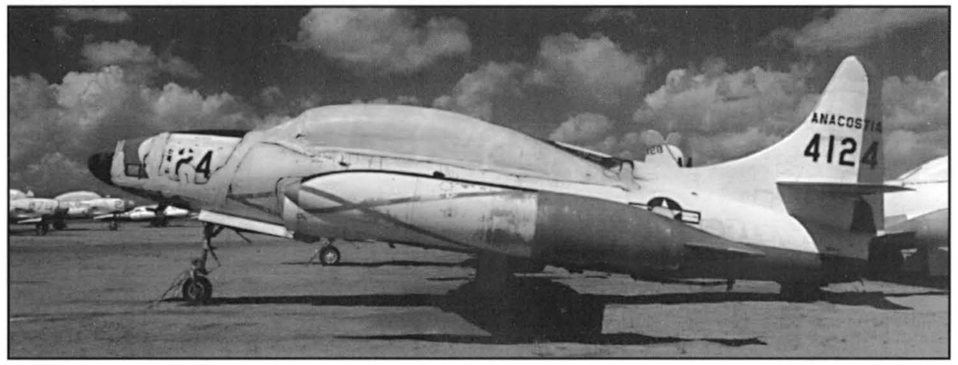
At right below, T2V-1 144124 in storage at NAF Litchfield Park, Az., on 18 March 1963. In the 1950s, aircraft assigned to duty in Washington, DC were assigned to NAS Anacostia. In late 1961, the field was closed and the Navy moved its operations to Andrews AFB. Note unusual tip tank markings. (William Swisher)

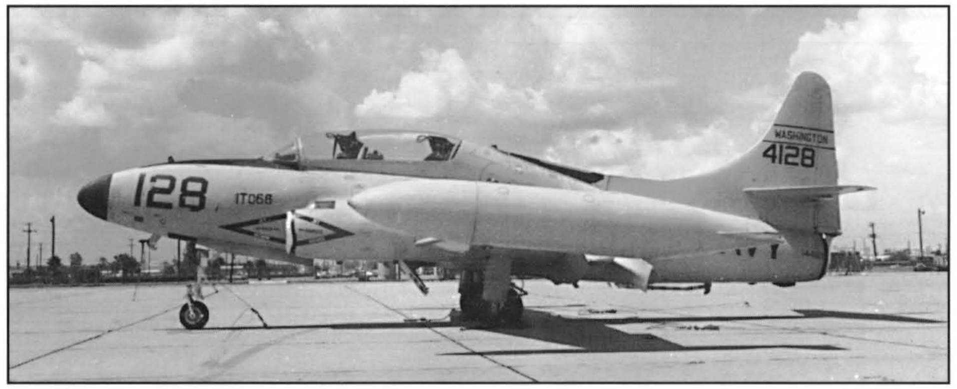
At right bottom, all grey T-1A 144128 in 1970 at Davis-Monthan AFB upon retirement from NAF Washington (via Clay Jansson)

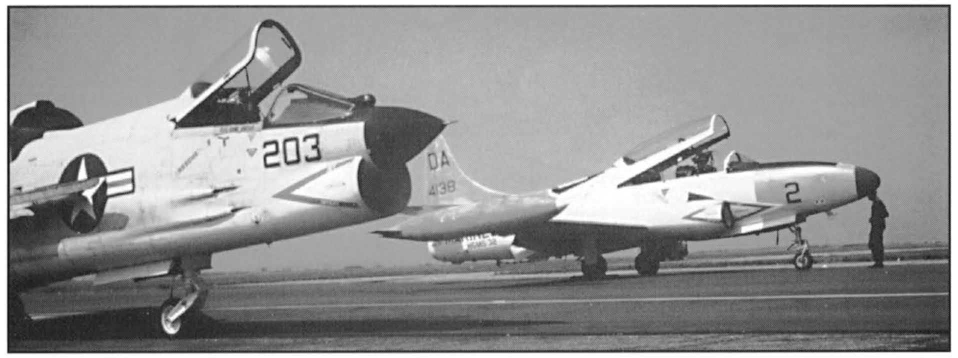


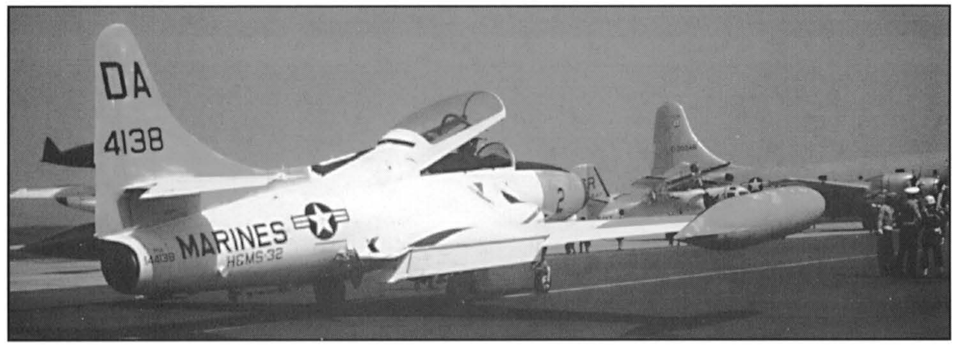


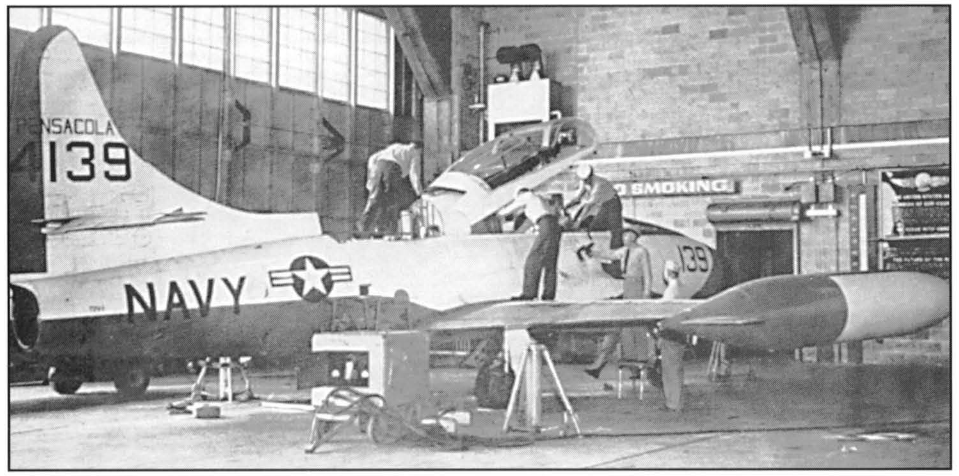


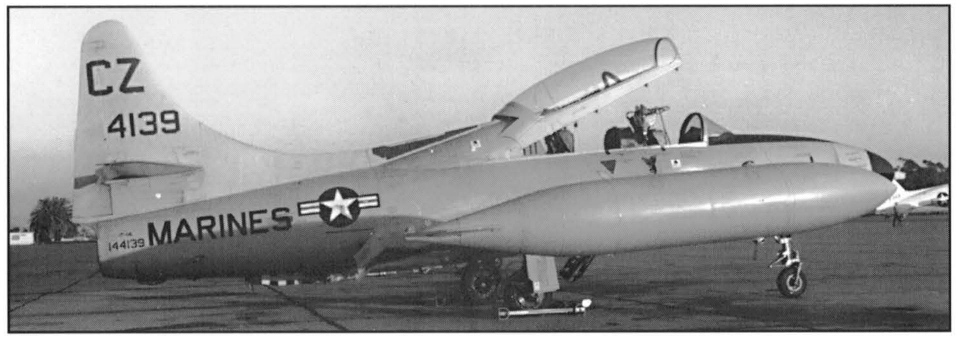


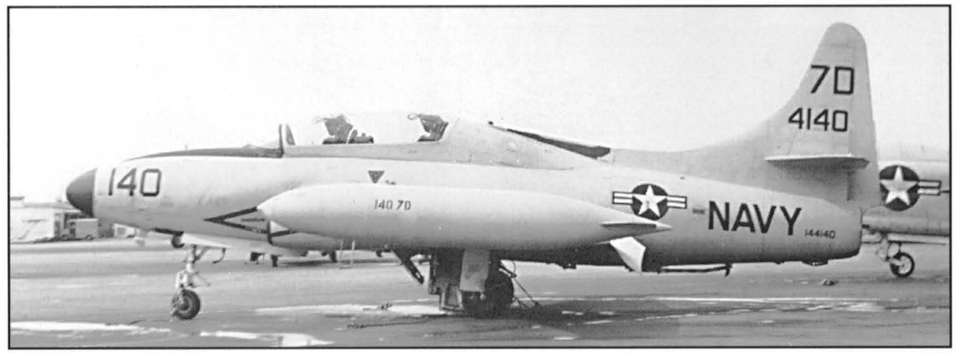










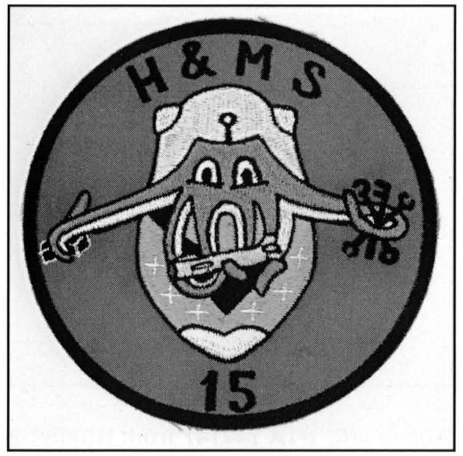


At left, two views of T-1A 144138 from H&MS-32 in May 1965. The da-glo red-orange trim is heavily weathered. (Steve Robbins via Doug Slowiak)

Below left, T2V-1 144139 undergoing maintenance at Sherman Field, Fl. Aircraft is white with red-orange trim. (USN)

At left, T-1A 144139 at NAS North Island on 17 September 1966 in overall grey. Aircraft was assigned to H&MS-27. (William Swisher)

At left bottom, all grey T-1A 144140 assigned to NAS Dallas, Tx., on 4 May 1968. (Fred Roos)



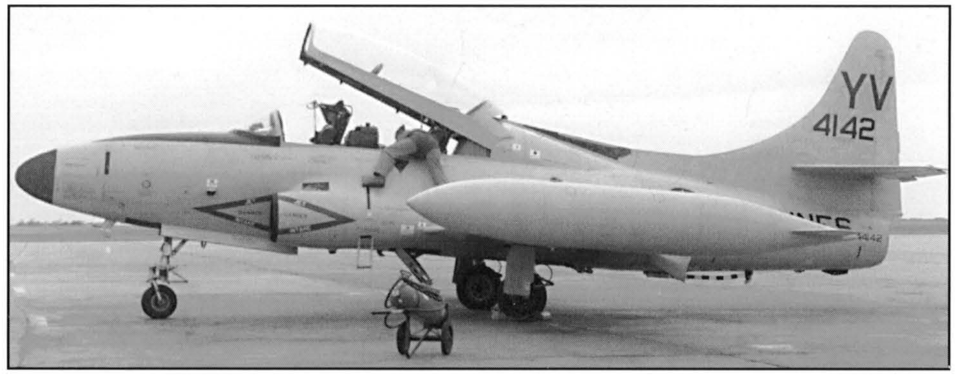
Above right, all grey T2V-1 144142 from H&MS-15 in 1966. (via S. Nicolaou)

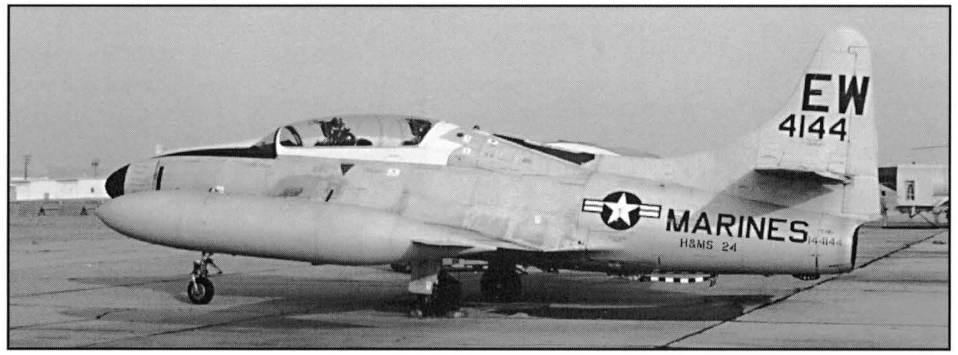
At right, all grey T-1A 144144 from H&MS-24 at MCAS Cherry Point on 30 May 1967. Note the replacement canopy has a white frame and has not been painted after coming from the desert boneyard. (William Swisher)

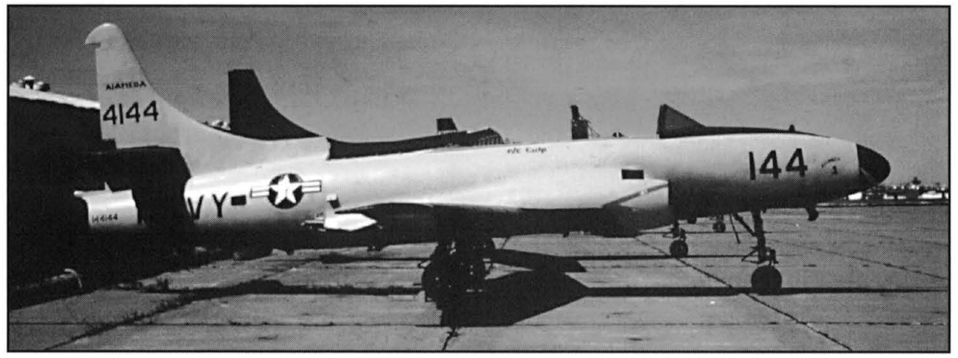
At right, 144144 as seen in October 1973 at the end of its career at NAS Alameda. Like many Seastars, it had been stripped of essential equipment, and ended its life as a catapult test air-frame. It was painted overall yellow and now resides at the bottom of the Pacific Ocean. (Carl Waldenmaier via Doug Slowiak)

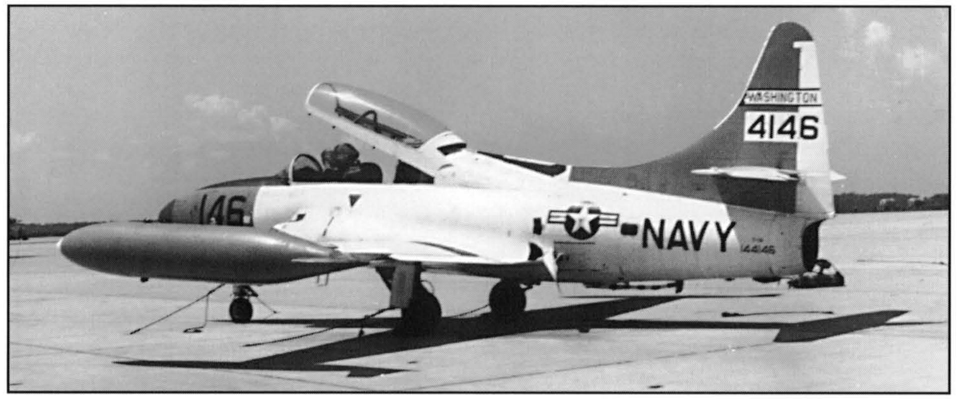
Below right, T-1A 144146 on 15 June 1966 at NAF Washington. (via Lionel Paul)

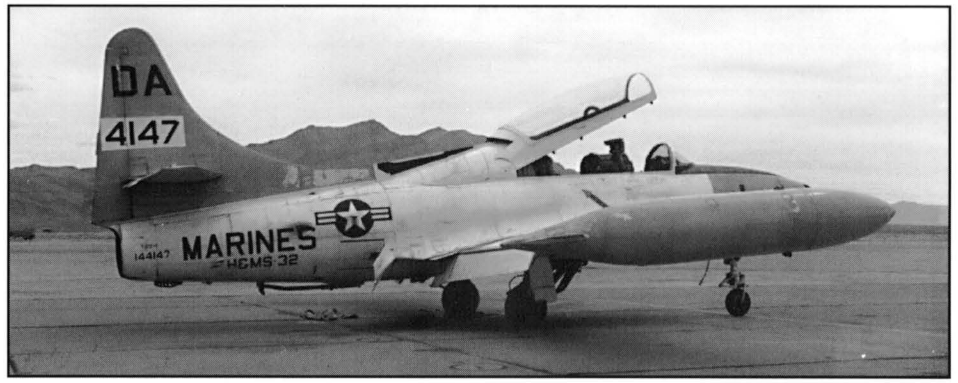
Bottom right, T2V-1 144147 at Nellis AFB on 23 March 1963. The aircraft was extremely weathered and the post-1962 designation of T-1A had not replaced the original designation even a year after the change was ordered. (William Swisher)

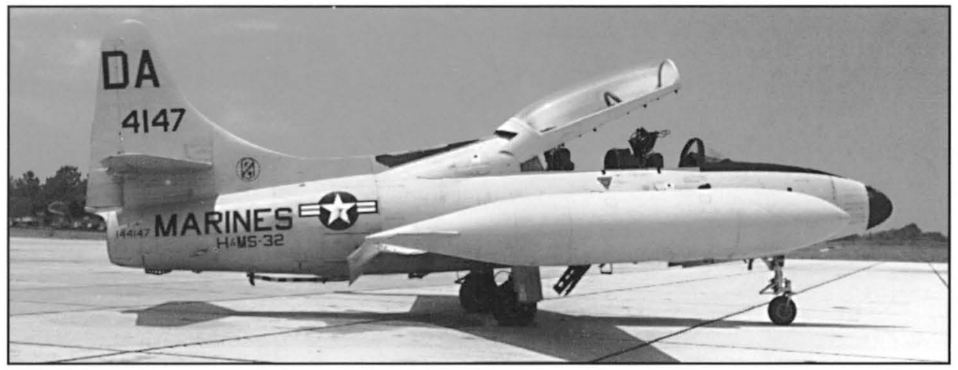


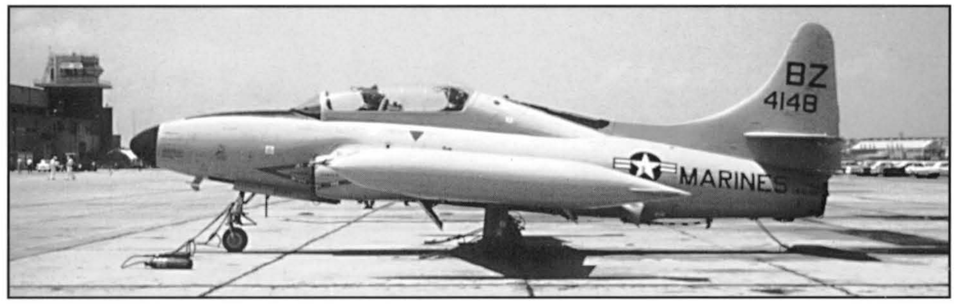


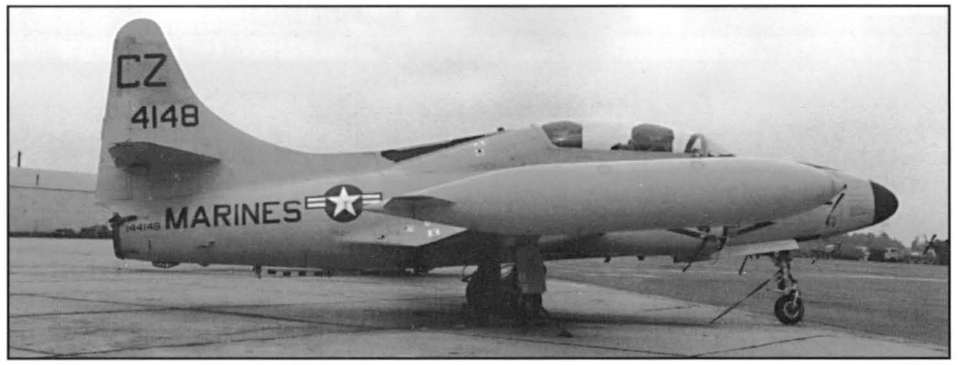


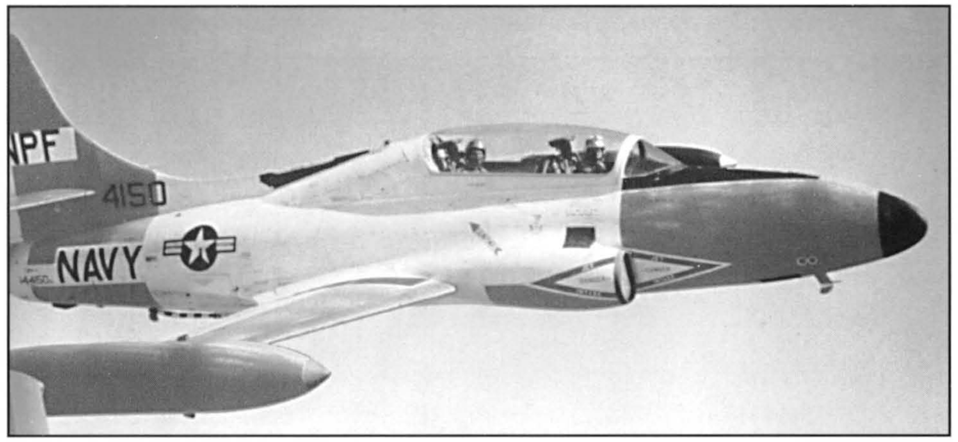


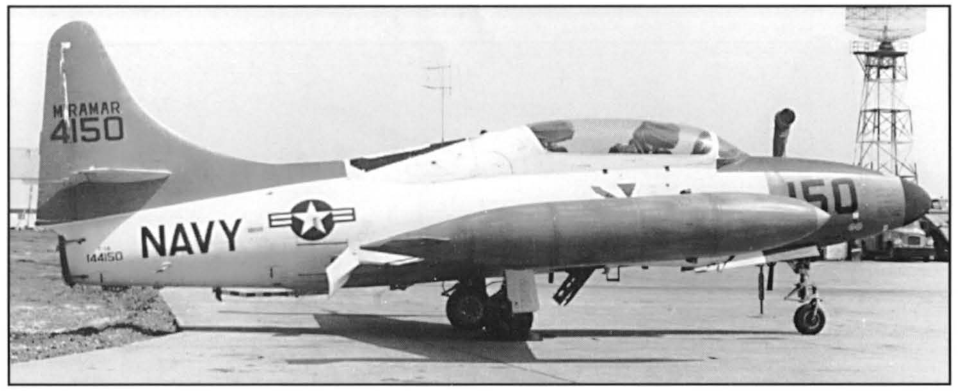












Above left, T-1A 144147 from H&MS-32 at MCAS Beaufort on 29 May 1967. Squadron insignia is in black on the dorsal fin. (William Swisher)

At left, all grey T-1A 144148 from HS FMFLANT in May 1966. (Terry Love via Doug Slowiak)

At left, 144148 at MCAS Cherry Point on 30 May 1967 with the CZ tail code of H&MS-27 on the tail. (William Swisher)

At left, T2V-1 144150 from the Naval Parachute Facility in flight over NAF El Centro on 15 January 1962. The pilot was LT Ready and PH2 Lester Harris was in the rear cockpit. (Bob Lawson)

At left bottom, T-1A 144150 assigned to NAS Miramar in 1965. (via S. Nicolaou)

NAVAL AIR STATION
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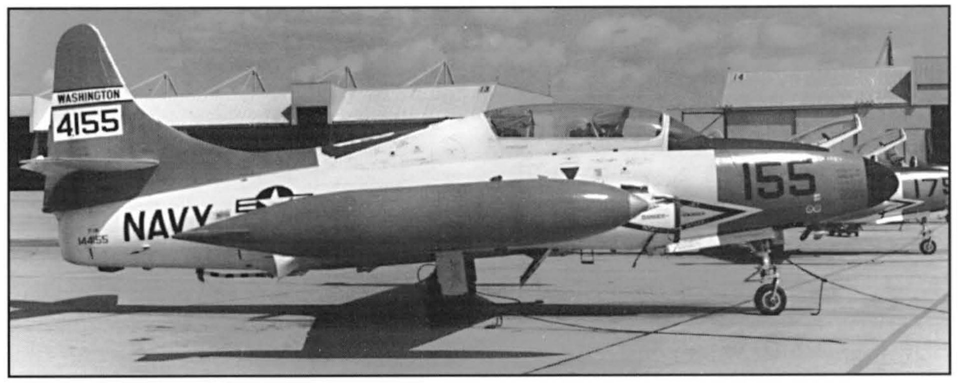
Above right, T-1A 144155 assigned to NATU Andrews in September 1964. Aircraft is white with red/orange trim. The two thin stripes on either side of WASHINGTON are black. (AAHS via Craig Kaston)

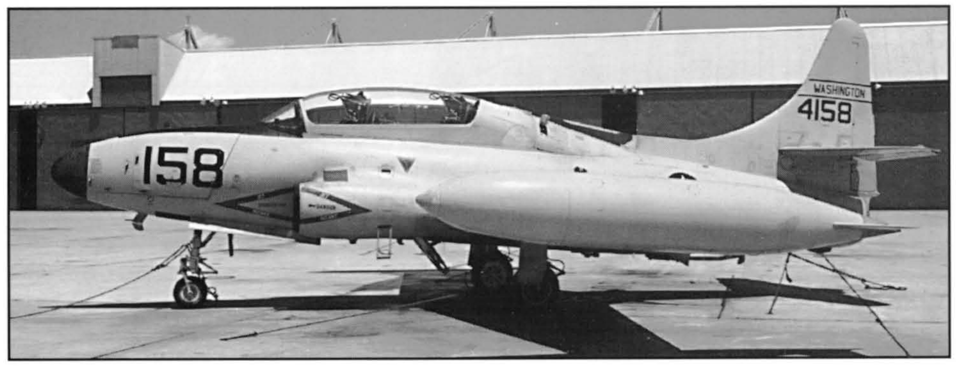
At right, T-1A 144158 in overall grey as assigned to NAF Washington on 31 May 1971. (Fred Roos)

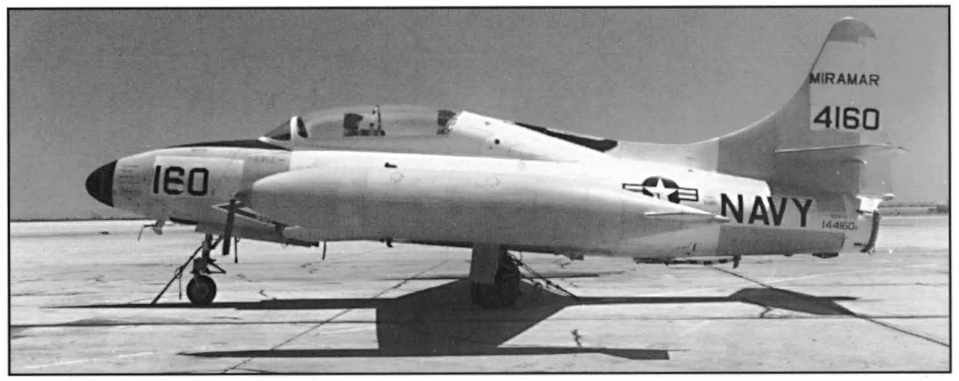
At right, T2V-1 144160 assigned to NAS Miramar on 25 July 1960. Aircraft is white with extremely faded da-glo red/orange. (William Swisher)

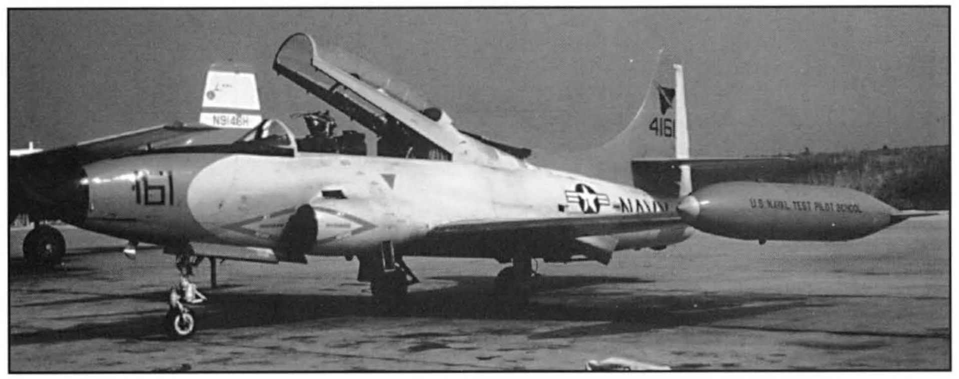
Below right, T-1A 144161 assigned to the Naval Test Pilot School at NAS Patuxent River on 11 June 1970. TPS Seastars were unusual in that they were painted in overall grey with red trim. The stylized Skyray on the tail was black. (Stephen Miller via Slowiak)

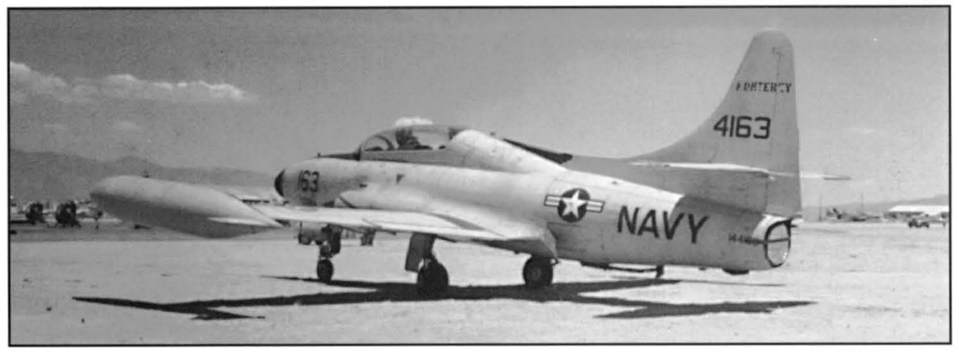
At right bottom, overall grey T-1A 144163 from the Naval Post Graduate School, Monterey. (W. Swisher)

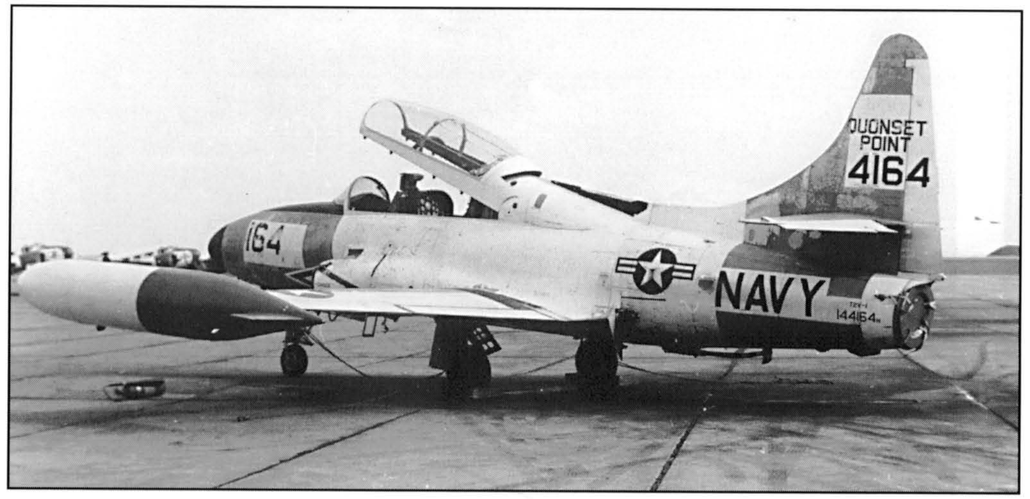






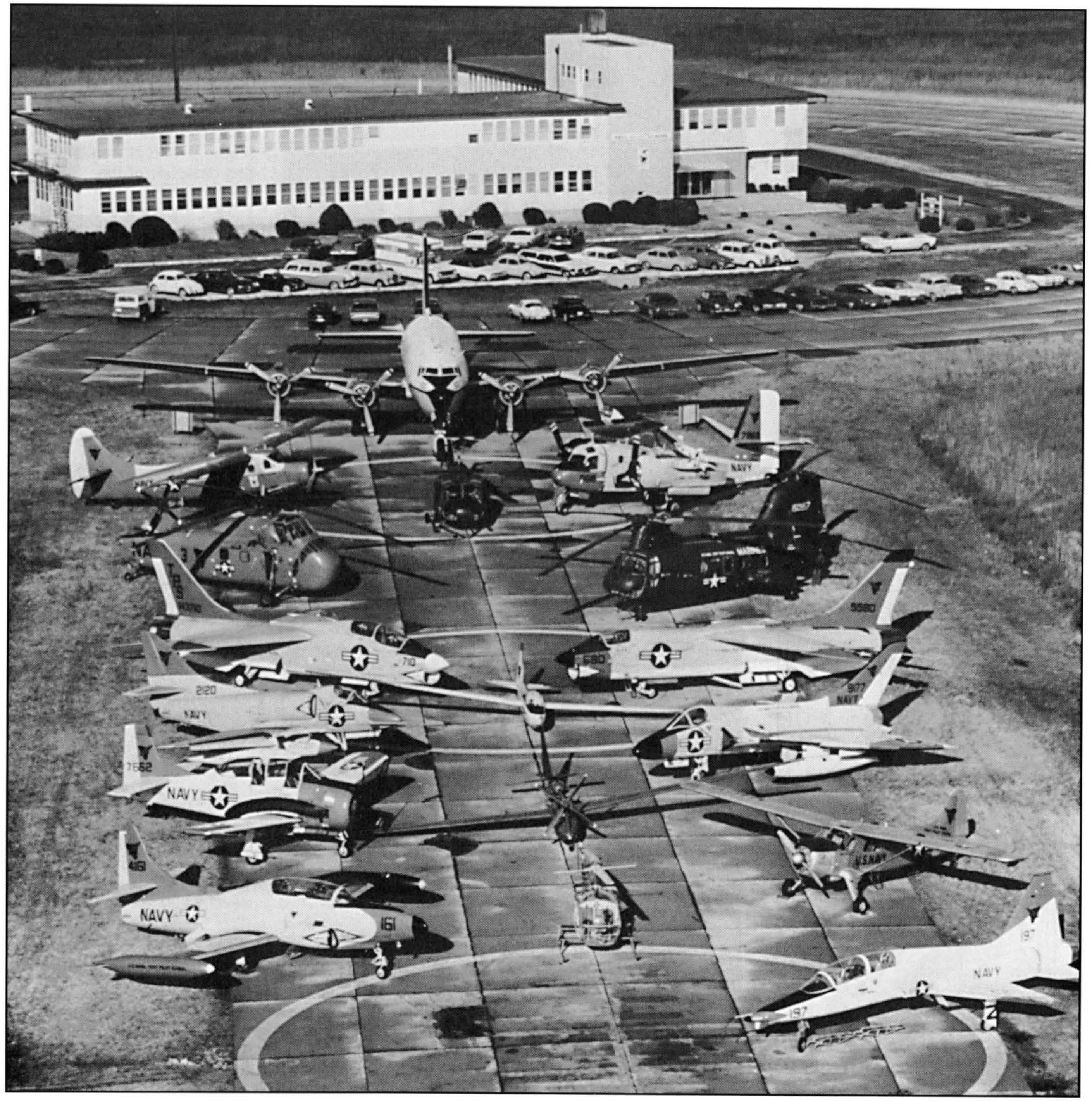






At left, T2V-1 144164 was assigned to NAS Quonset Point prior to 1962. The daglo red/orange paint has faded to almost white in places. (via Craig Kaston)

Below, Test Pilot School family portrait in 1970. T-1A 144161 is in the left foreground. Clockwise: T-28B, A-4B, TF-8A, SH-34G, NU-1B, C-54Q, S-2D, CH-46, F-8J, F-6A, UH-6A, and T-38A. Center row: TH-13M, X-26B, X-26A and UH-1B. (USN)



U.S. NAVAL AIR STATION
OLATHE KANSAS

Above right, allover grey T-1A 144164 assigned to NAS Olathe on 29 November 1969. The tail code and the last three digits of the BuNo are repeated on the tip tank. This was a common practice at the time in case the auxiliary fuel tanks were removed. However, it was misguided since the T-1A tanks were not designed to be removed. Electronic bay nose door is open for maintenance. (Fred Roos)

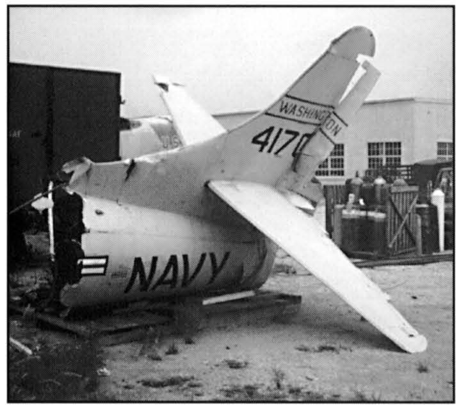
At right, T-1A 144164 after retirement on 8 April 1971. The all grey aircraft was last assigned to NAS Dallas. (Doug Slowiak)

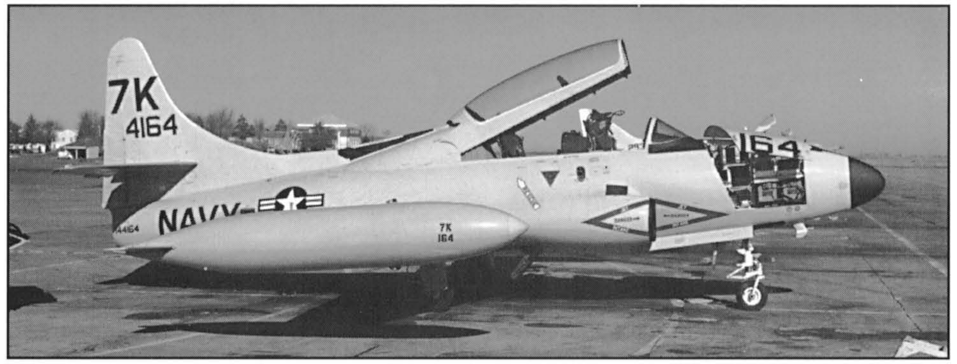
At right, rain soaked all grey H&MS-27 T-1A 144167. (via Gene Holmberg)

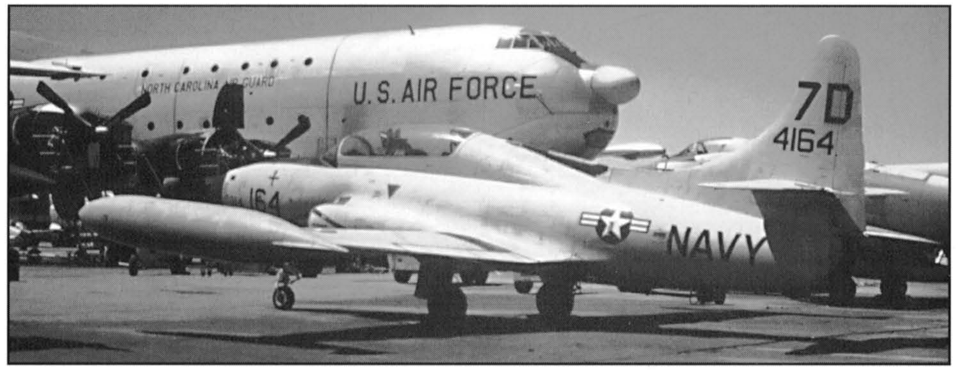
Below right, extremely faded ex Washington based T2V-1 144168 in outdoor storage at NAF Litchfield Park. (via Burger)

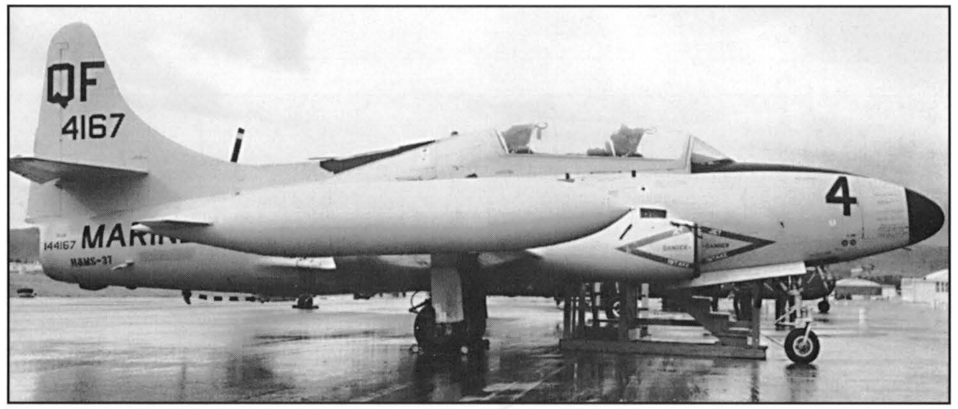
Bottom right, T-1A 144170 in colorful white and red scheme while assigned to NAS Memphis as seen at NAS Dallas on 24 September 1966. Note the all grey T-33B to the left of the Seastar (Clay Janson)

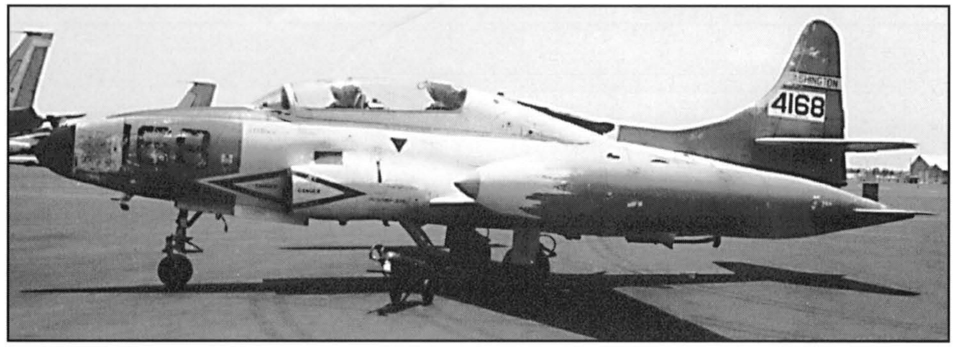
Below, September 1968 was the end of the line for T-1A 144170 after being assigned to NAF Washington. The aircraft was all grey with black markings. (Doug Slowiak)

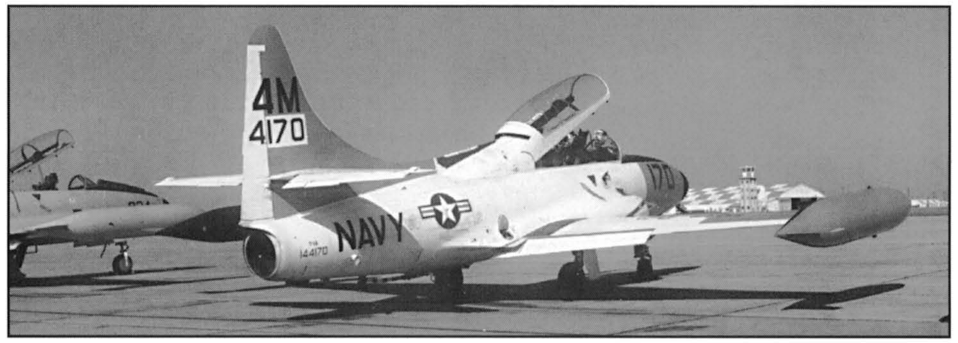


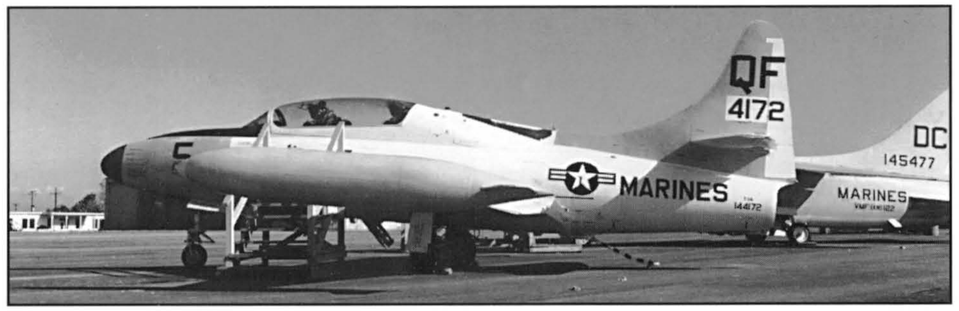


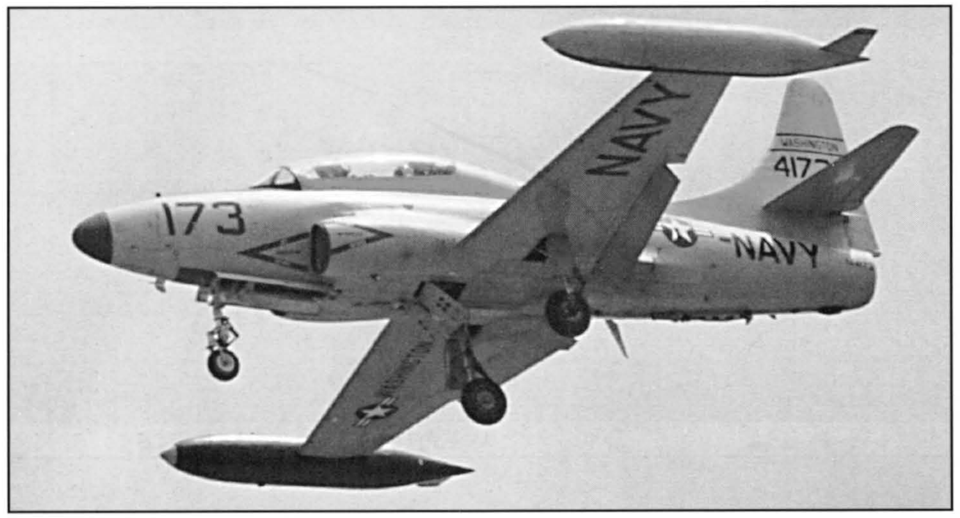


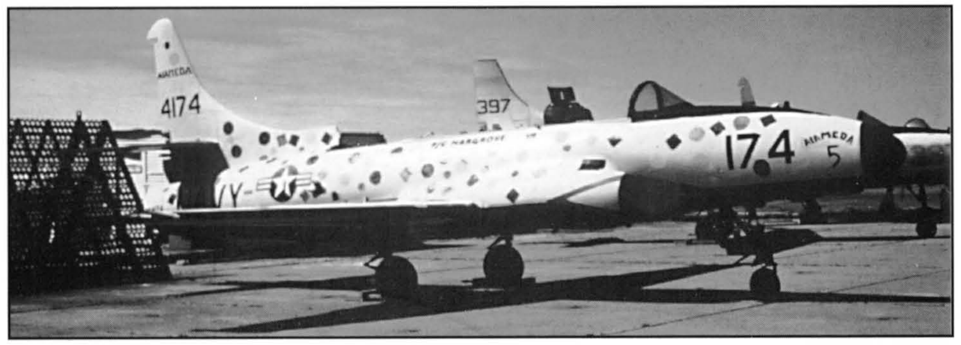


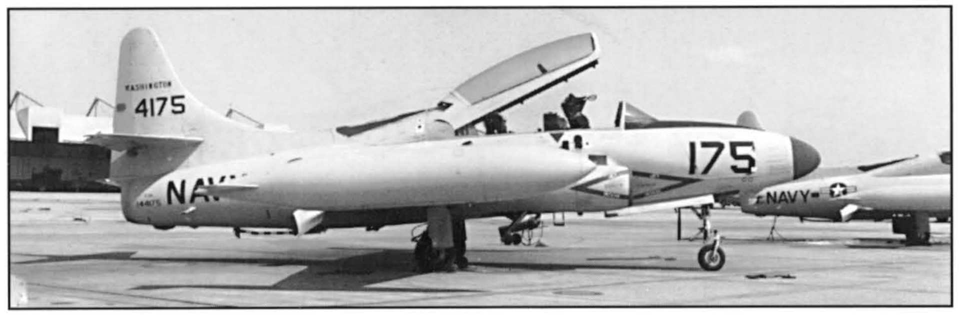


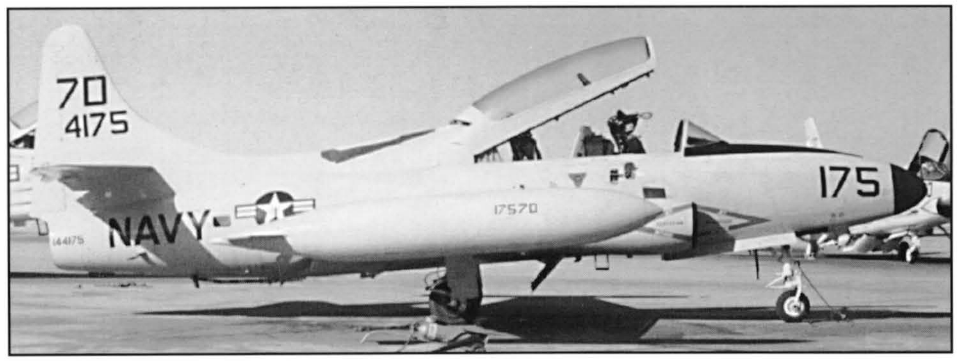


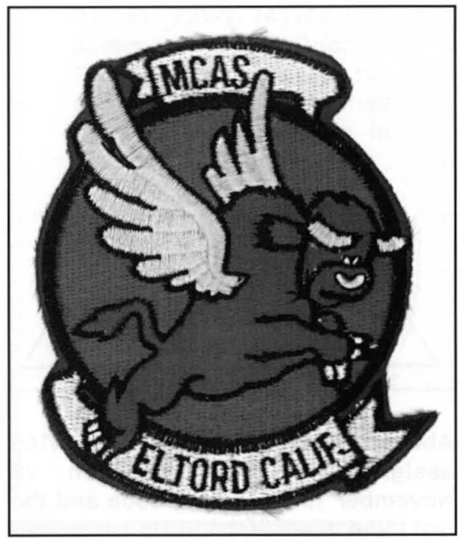












Above left, T-1A 144172 from H&MS-37 at MCAS El Toro on 15 February 1964. It is unusual to see the tail hook lowered as shown here. (Clay Jansson via William Swisher)

At left, T-1A 144173 landing at Shaw AFB, South Carolina, on 14 August 1970. This Washington based aircraft was grey with black markings. Note WASHINGTON is spelled out on the lower wing. (Jim Sullivan via Fred Roos)

At left, T-1A 144174, "ALAMEDA 5", sits stripped of useful equipment awaiting its fate as a catapult test article in October 1973. Aircraft is overall grey with multi-colored dots and squares applied as decoration. (Carl Waldermaier via Doug Slowiak)

At left, T-1A 144175 at Andrews AFB on 2 June 1967. Note how tight the entry space between the canopy rail and the fuselage was for the rear cockpit. (William Swisher)

At left below, T-1A 144175 after being re-assigned to NAS Dallas in 1968. Aircraft is overall grey. (via Burger)

At right top, T2V-1 144176 as it originally appeared when first assigned to NAS Memphis in white and da-glo red/orange scheme. Note T2V-1 144177 is at the far right. 4176 carried a 2M tail code and 4177 carried a 4M tail code. (via Doug Slowiak)

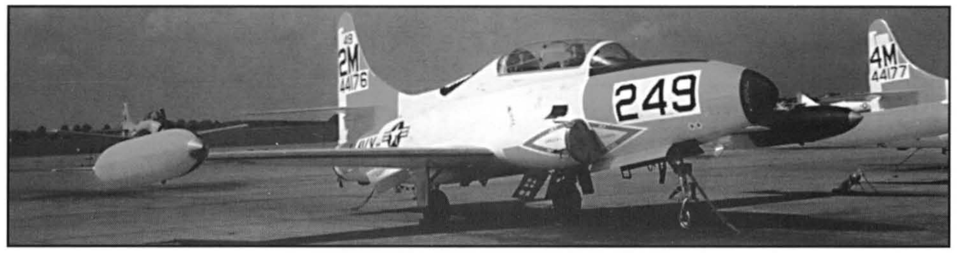
At right above, T-1A 144176 in red and white scheme while assigned to NAS Memphis in May 1966. (Nick Williams)

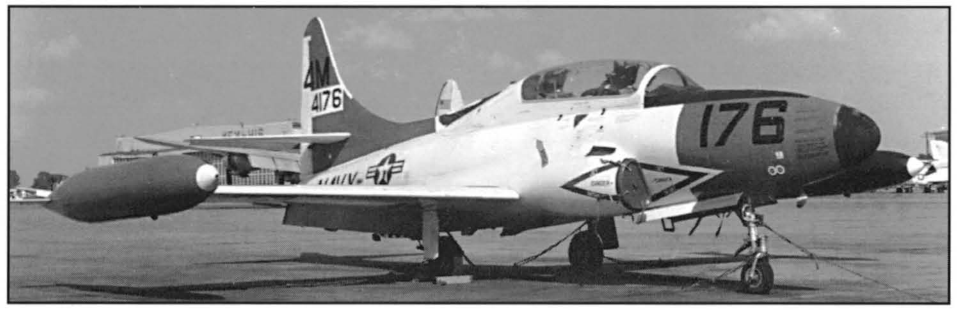
At right, T-1A 144176 in all grey scheme while assigned to NARTU Andrews on 2 June 1967. The Seastars were delivered to the Navy with natural metal landing gear, which were repainted white when the aircraft were repainted all over grey. (William Swisher)

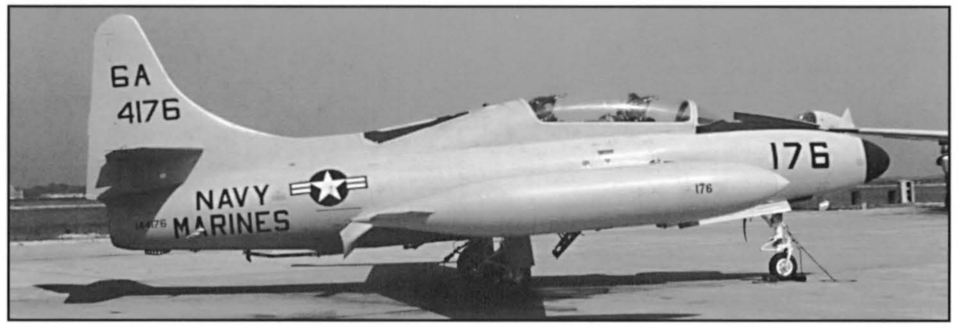
At right, T-1A 144176 in the twilight of its career on 12 September 1970 while assigned to NAS Willow Grove. (Robert O'Dell via William Swisher)

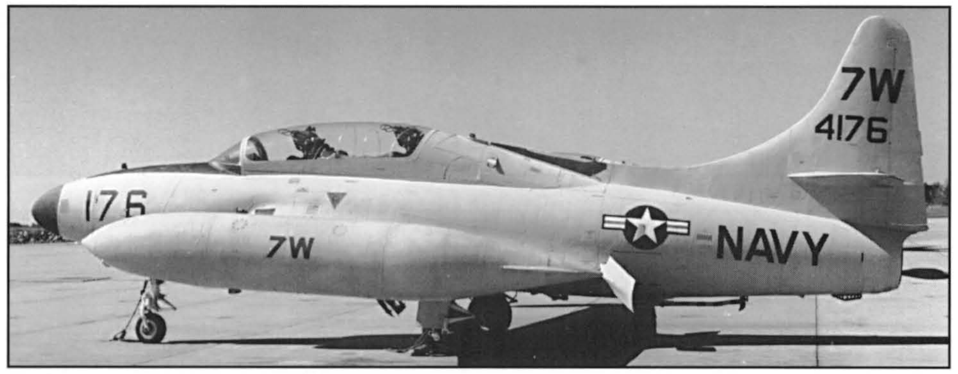
At right below, T-1A 144178 after retirement from NAS Olathe at Davis-Monthan AFB on 17 March 1970. "Navy" on the rear fuselage was painted over by Marines. (William Swisher)

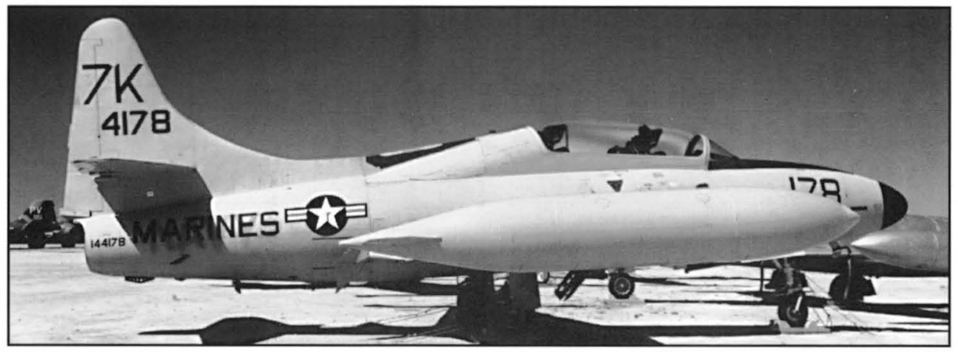
At right bottom, T-1A 144179 in all over grey while assigned to NAS Willow Grove. The tail code and the last three digits of the BuNo were repeated on the tip tank. (via Lionel Paul)

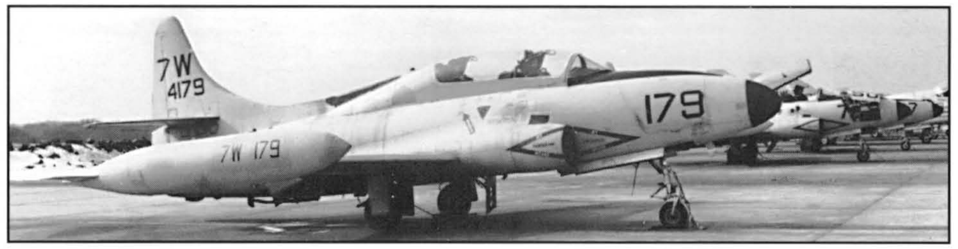


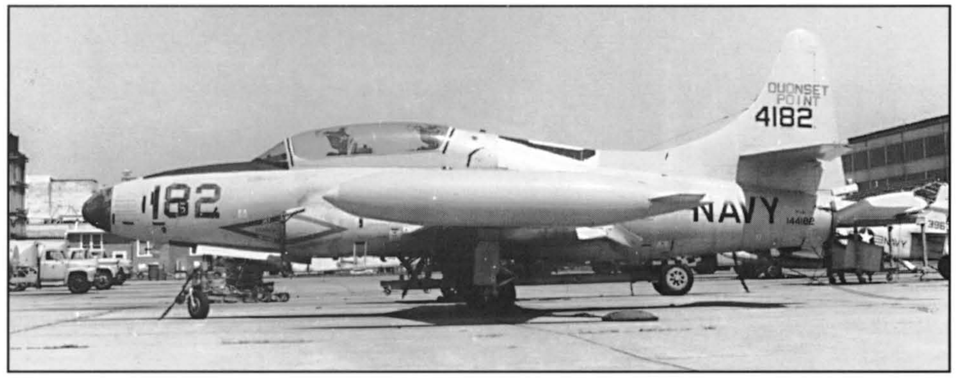


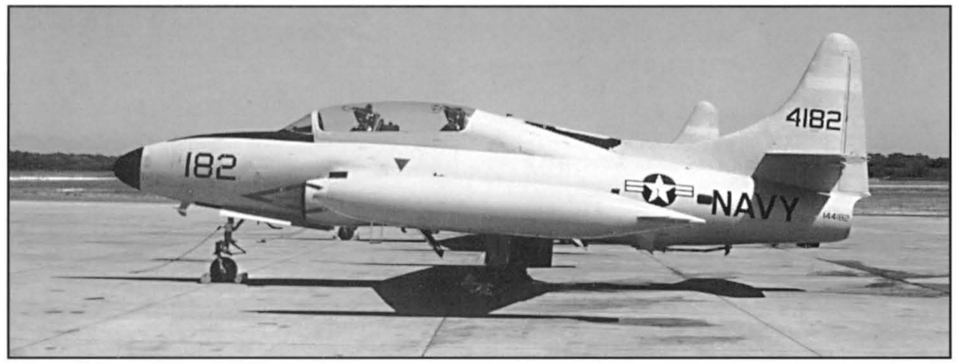


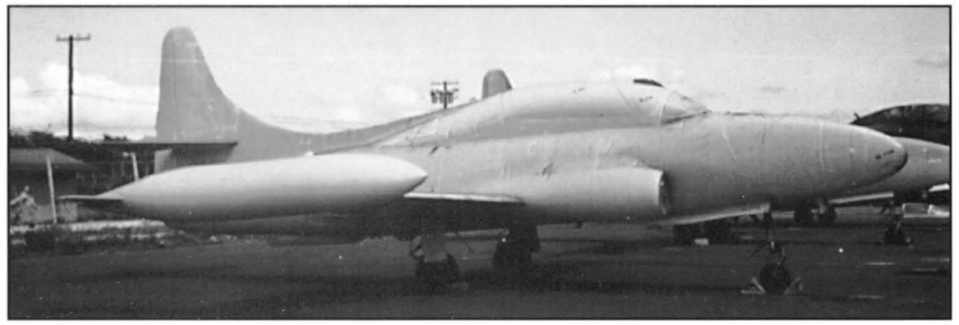


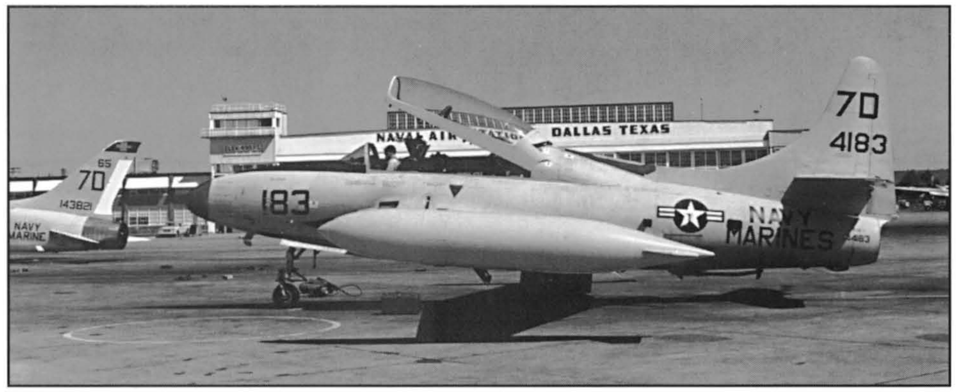


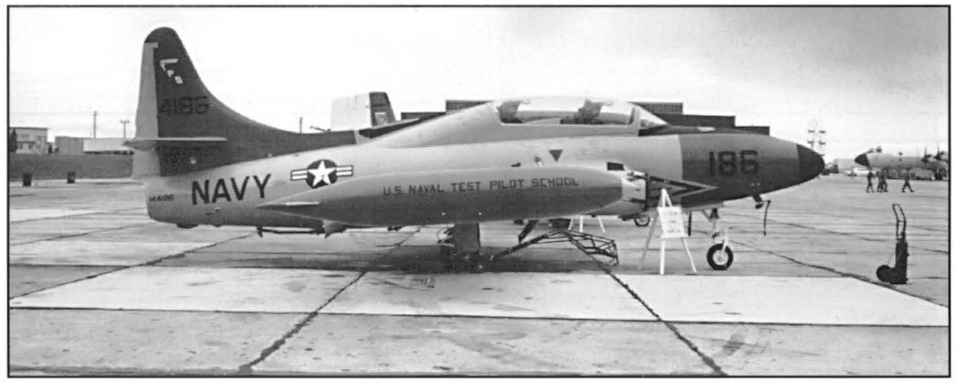












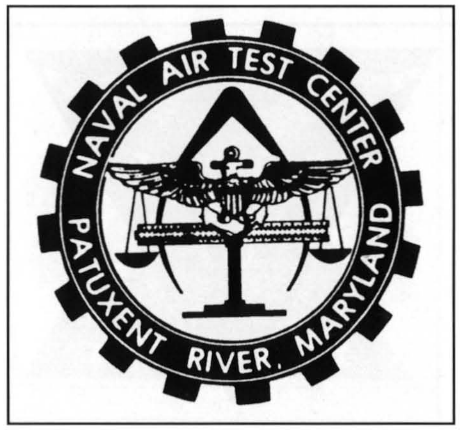
At left top, T-1A 144182 assigned to NAS Quonset Point, RI, on 5 June 1967. (Clay Jansson)

At left, T-1A in 1969 at NAS Barbers Point. (Nick Williams)

At left below, cocooned T-1A Seastars at NAS Barbers Point, HI. (Nick Williams)

At left, T-1A 144183 was assigned to NARTU Dallas on 22 September 1966. Aircraft is all over grey with "Navy" and "Marine" painted on the aft fuselage. (Clay Jansson via William Swisher)

At left below, T-1A 144186 at the U. S. Naval Test Pilot School at NAS Patuxent River, MD, on 15 July 1967. Aircraft was grey with red trim. (via Lionel Paul)



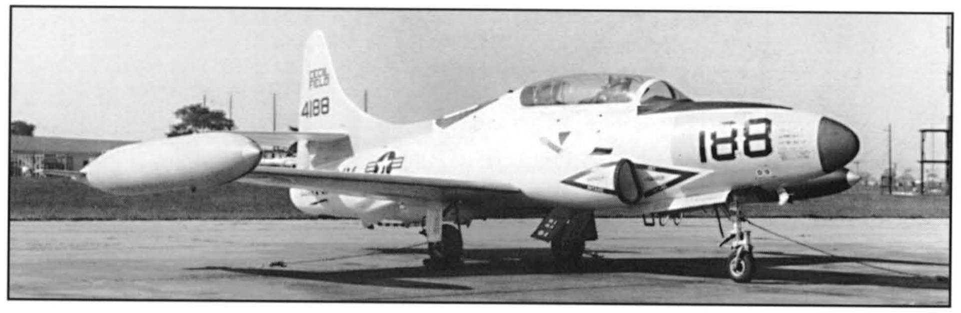
At top right, T-1A 144188 in white and da-glo red/orange scheme was assigned to NAS Cecil Field, FL, in 1964. (Clay Jansson)

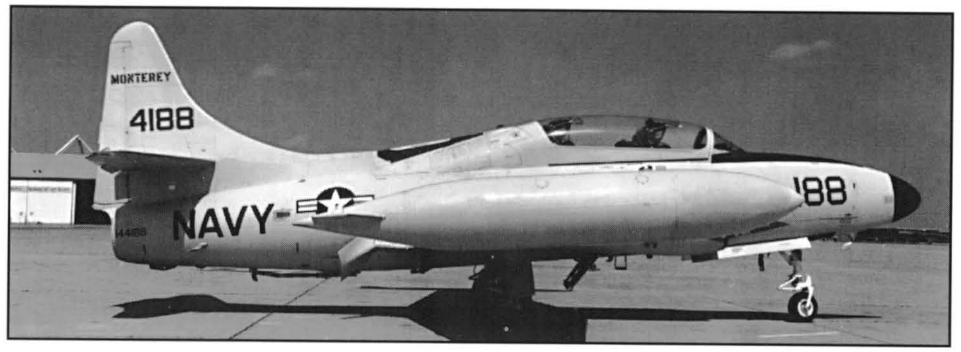
At right, T-1A 144188 was reassigned to the U. S. Navy Post Graduate School at Monterey, CA. Aircraft was all over grey with black markings when photographed at NAS Lemoore, CA, on 4 May 1969 (William Swisher)

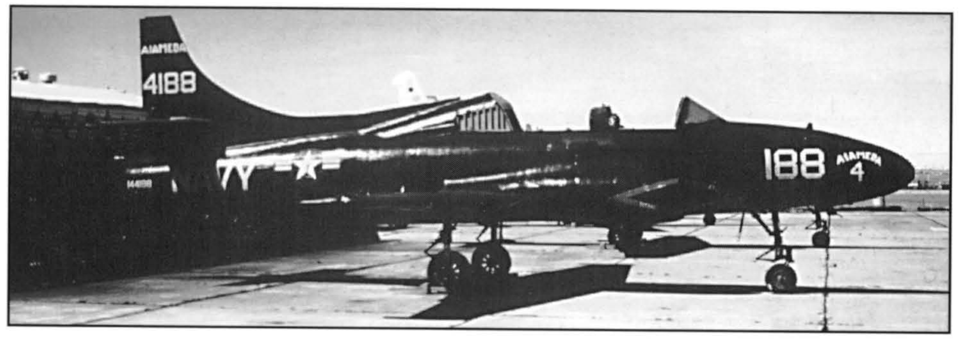
At right, T-1A 144188 finished its career as a catapult ejection test vehicle. "Alameda 4" was stripped of essential equipment and painted gloss black with yellow numbers and codes. (Carl Waldenmaier October 1973, via Doug Slowiak)

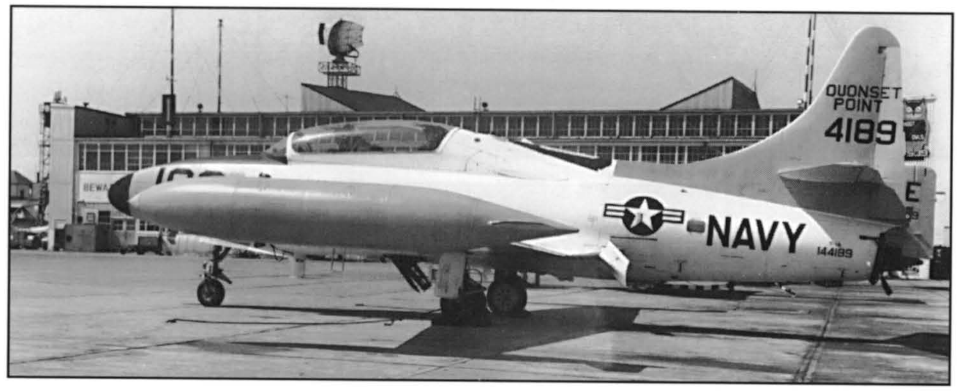
At right, T-1A 144189 on 16 May 1964 while assigned to NAS Quonset Point. (T. Cuddy via Fred Roos)

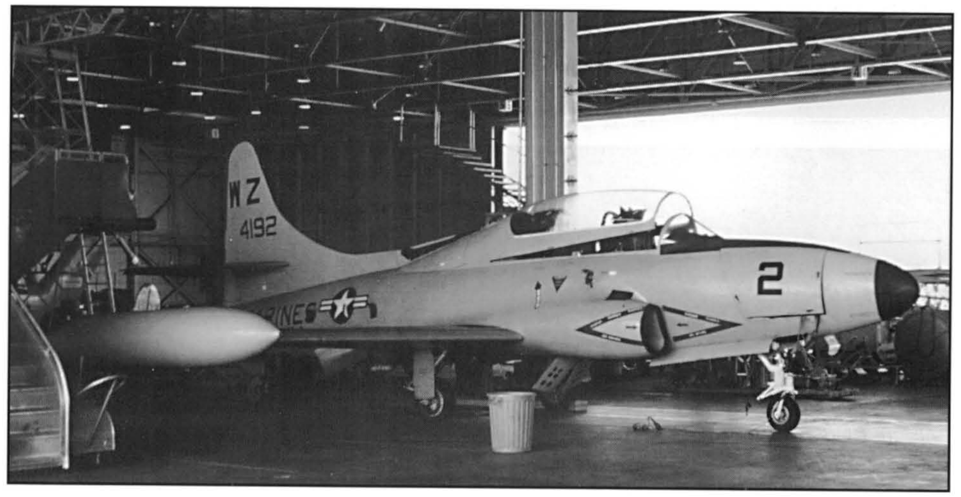
At right bottom, T-1A 144192 in a hanger at MCAS Kaneohe, HI, in April 1969. The aircraft was assigned to HEDRON FMF PAC (Headquarters Squadron Fleet Marine Force Pacific) and was all over grey with black markings. T-1As painted in the all grey scheme had black intake lips and red warning chevrons. (Nick Williams)

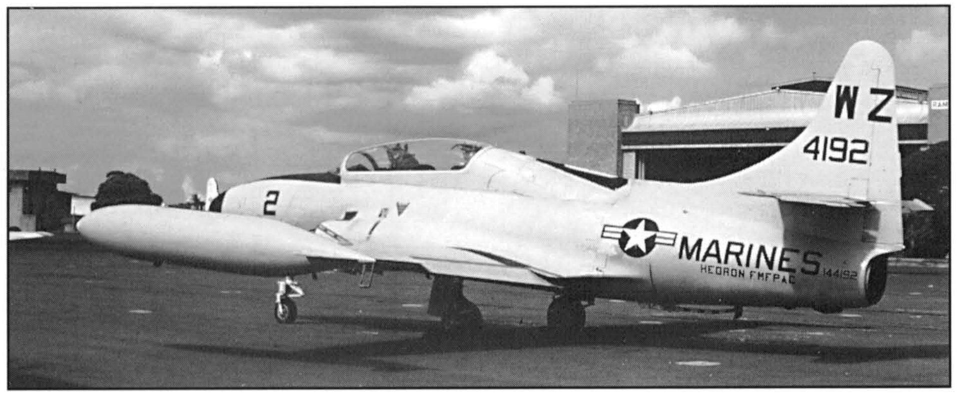












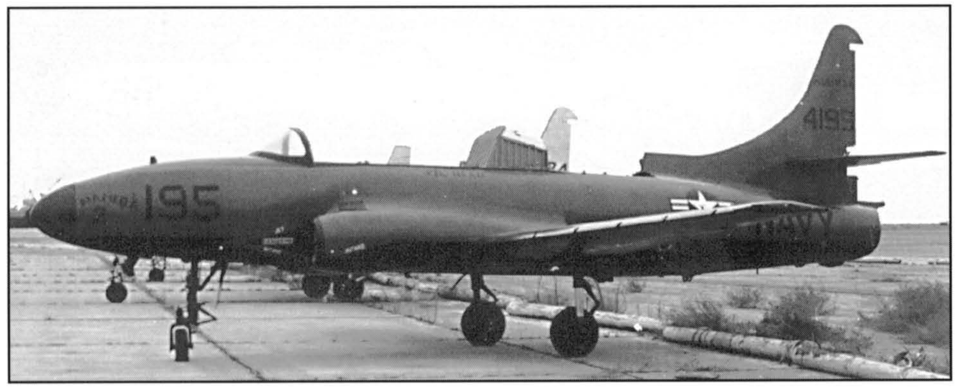
At left top, T-1A 144192 was assigned to HEDRON FMF PAC in 1969. (Nick Williams)

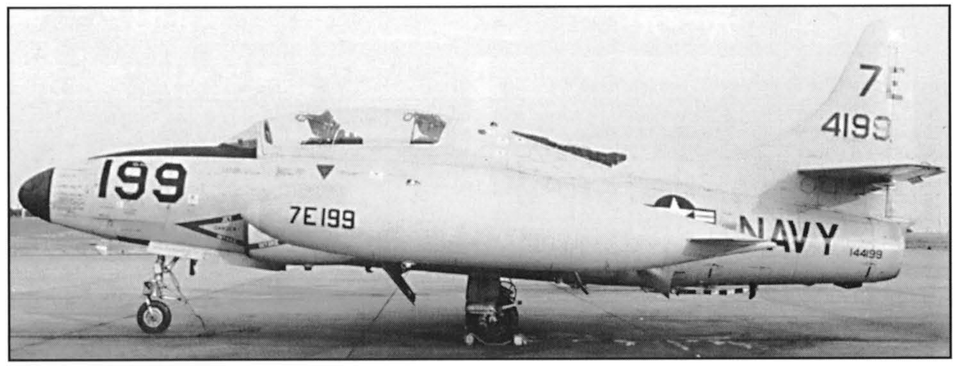
At left, T-1A 144195 finished its days as "Alameda 2" in 1973. The aircraft was painted red with black markings for its final "cat" shot. (via Burger)

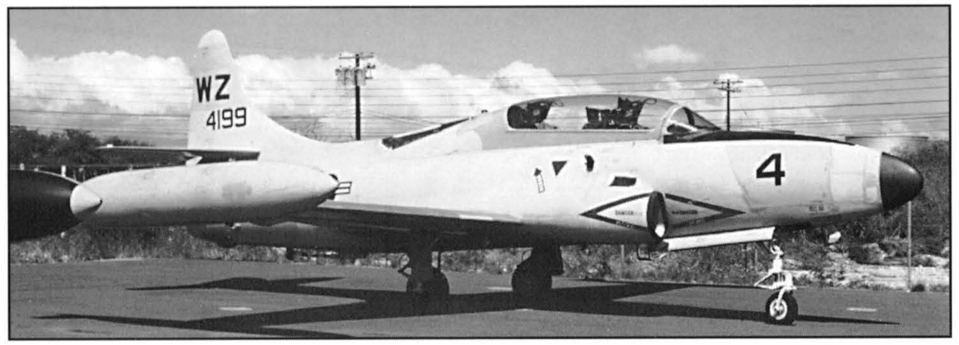
Below left, all grey T-1A 144199 was assigned to NAS Twin Cities, MI, in 1965. (Eric Lundahl via Harry Gann)

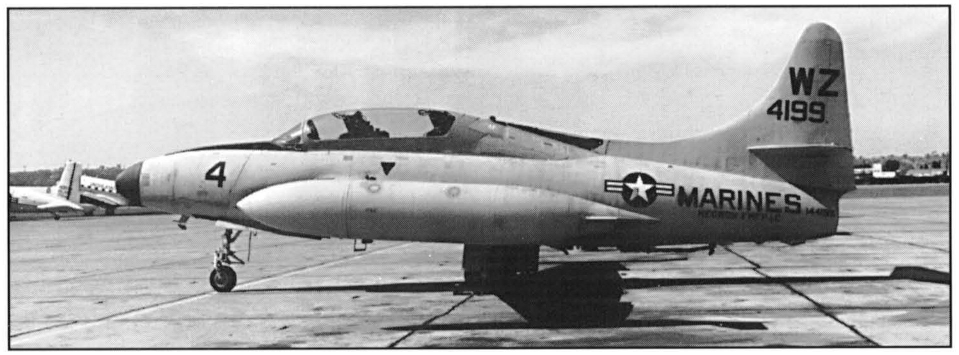
Below left, T-1A 144199 seen at NAS Barbers Point while assigned to HEDRON FMF PAC in August 1969. The aircraft was accepted by the Navy on 25 November 1957 and was originally assigned to MCAS Kaneohe Bay on 30 July 1967. (Nick Williams)

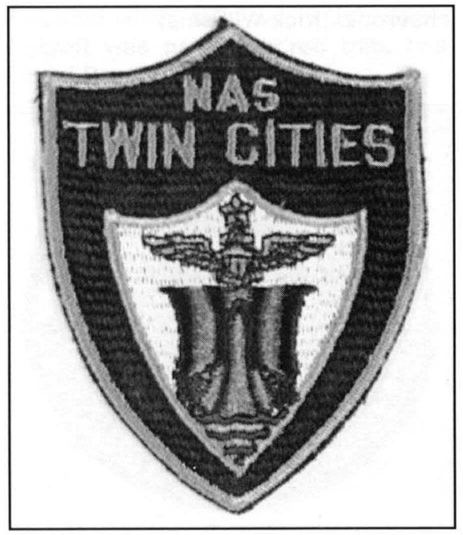
At left bottom, T-1A 144199 at NAS North Island on 14 February 1970. The airplane stayed in temporary storage at NORIS from 1 January 1970 through 12 March 1970, before being flown to MASDC, for final disposition. (Clay Jansson)



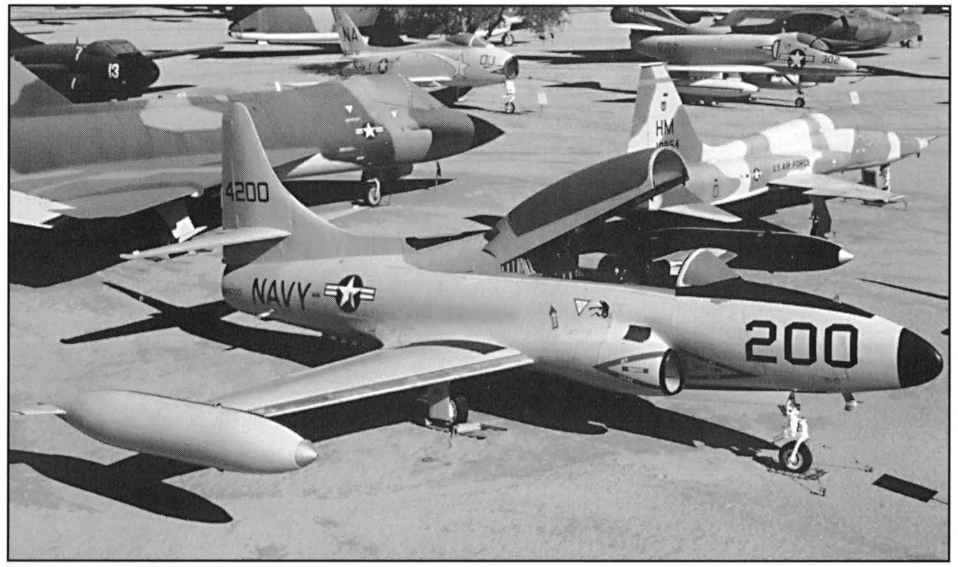


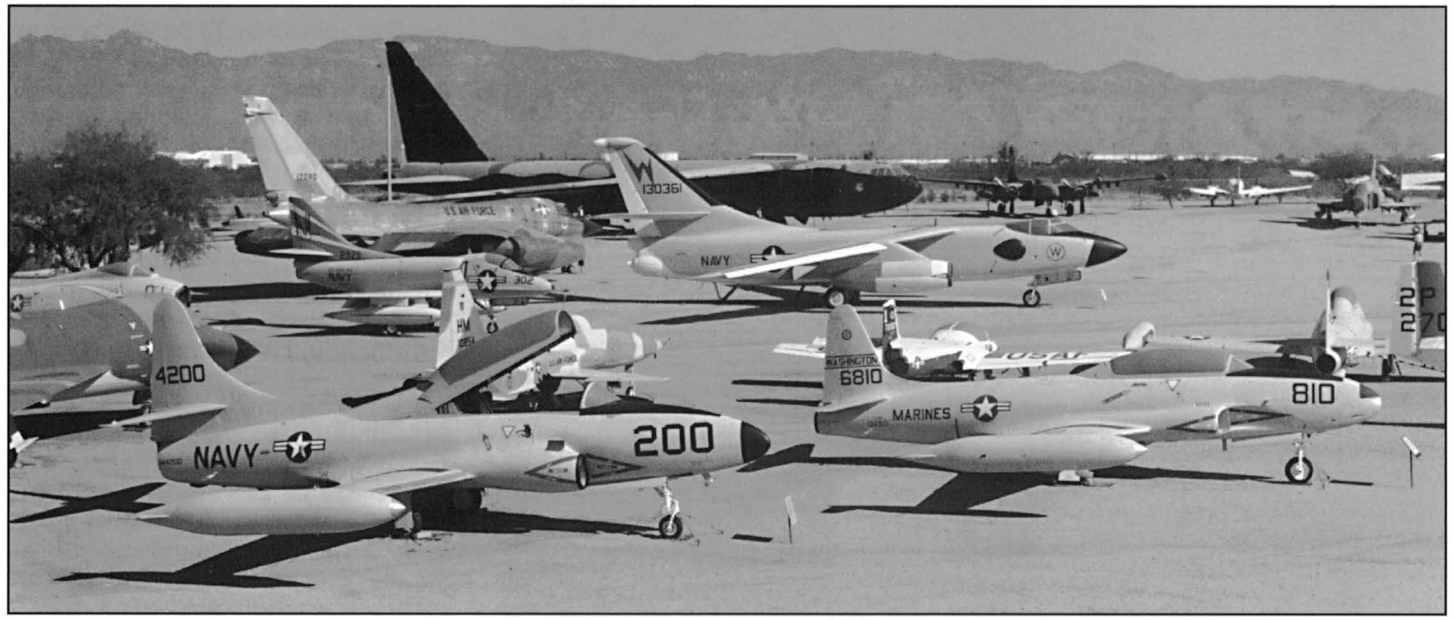






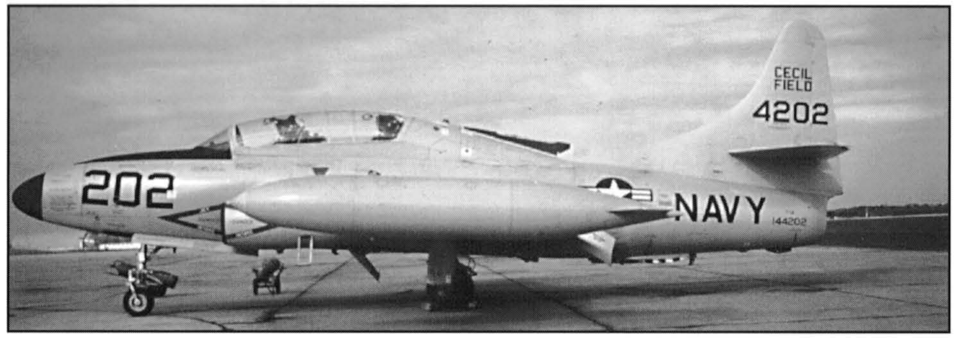
At right and below, T-1A 144200 as seen today at the Pima Air & Space Museum. The aircraft was previously flown at NAS Quonset Point. (Doug Slowiak)

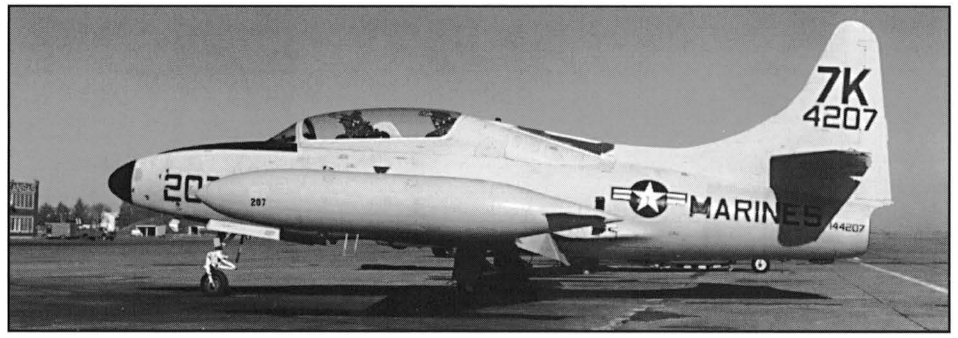


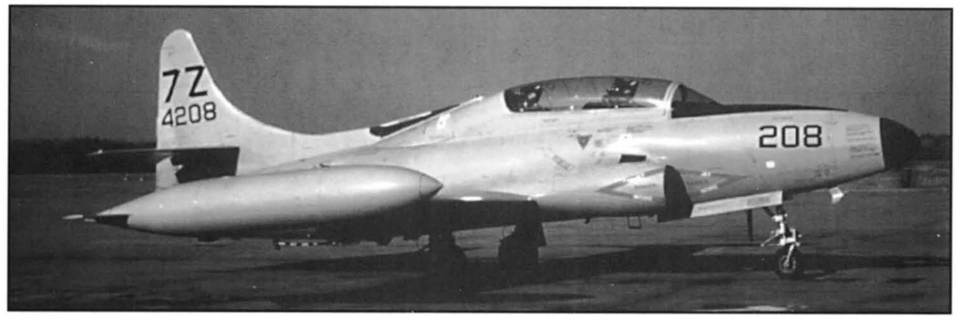


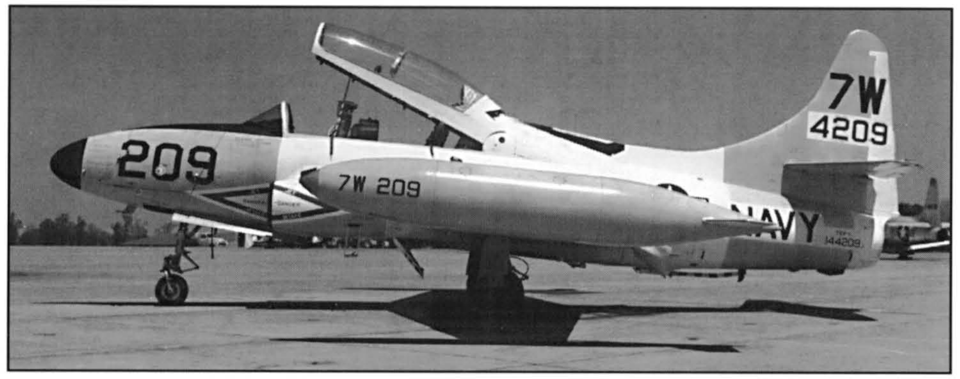
At right, T-1A 144202 at NAS Cecil Field, FL, on 20 March 1966. (via Iain MacPherson and Doug Slowiak)

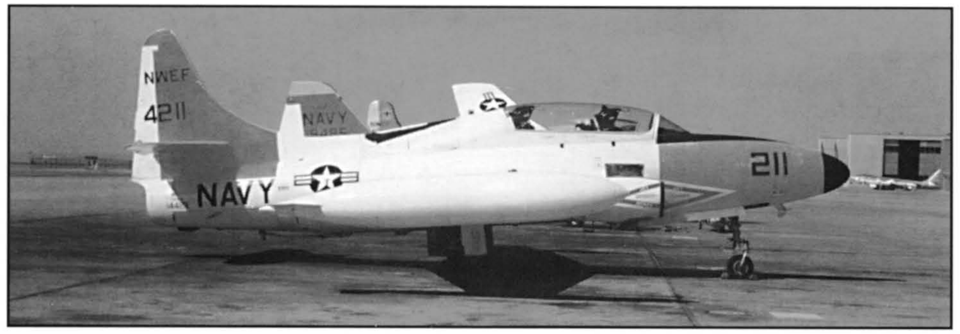
Bottom right, all grey T-1A 144207 was assigned to the Marine Reserve fighter squadron VMF-215 at NAS Olathe, KS, on 29 November 1969. (Fred Roos)

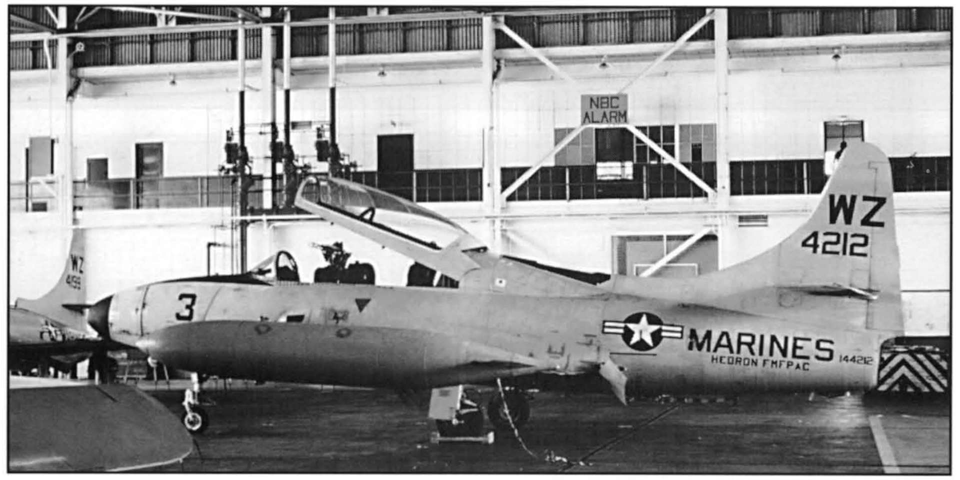


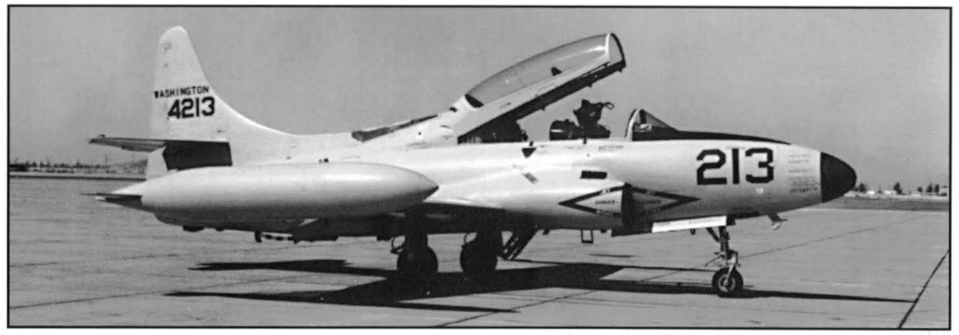












At left top, all grey T-1A 144208 was assigned to NAS South Weymouth, MA, on 26 November 1965. (via Iain MacPherson via Doug Slowiak)

At left, white and da-glo red/orange T2V-1 144209 was assigned to NAS Willow Grove. (Roger Besecker via AAHS)

At left, on 22 March 1963 this Seastar still carried the T2V-1 designation. The aircraft was assigned to the Naval Weapons Evaluation Facility at Kirtland AFB, NM. (William Swisher)

Below left, "K-Bay" based T-1A 144212 parked in the hanger at MCAS Kaneohe Bay, HI, on April 1969. T-1A 144199 can be seen to the left of the picture. (Nick Williams)

Bottom left, Washington based T-1A 144213 was photographed at MCAS Yuma in June 1966. The aircraft is all grey and the seats and upper instrument panels were black. (Clay Jansson)

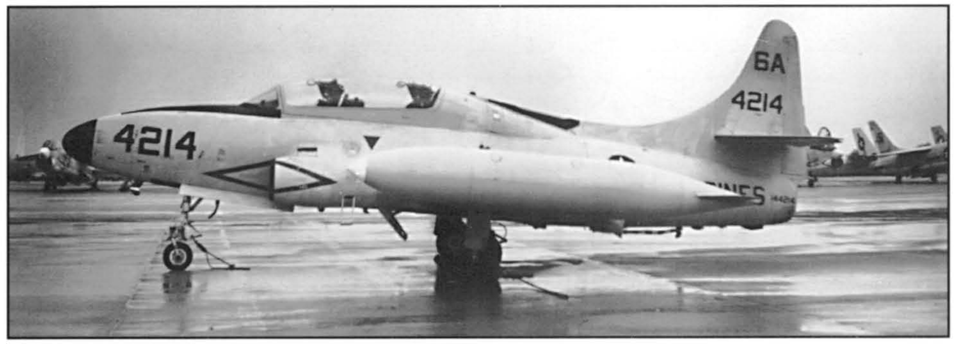
Above right, highly weathered grey T-1A 144214 after a rain storm on 4 November 1970. The aircraft was assigned to NARTU Andrews and had the last four digits of its BuNo repeated on its nose. (via Lionel Paul)

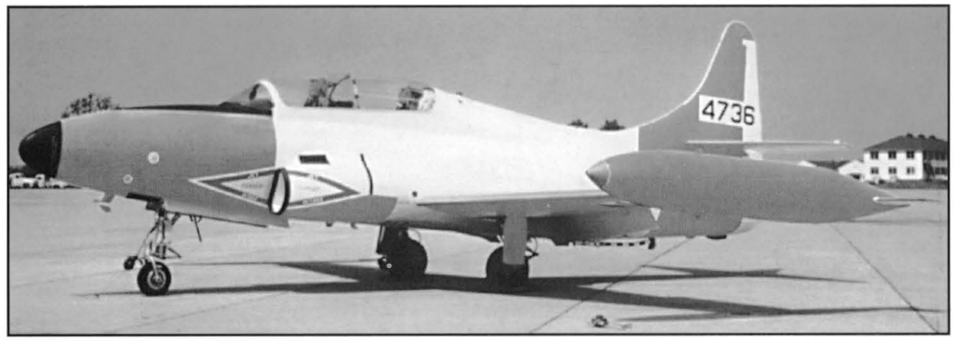
At right, T2V-1 144736 shortly after delivery to the Navy. Aircraft was painted in high viz da-glo red/orange and white scheme. (via S. Nicolaou)

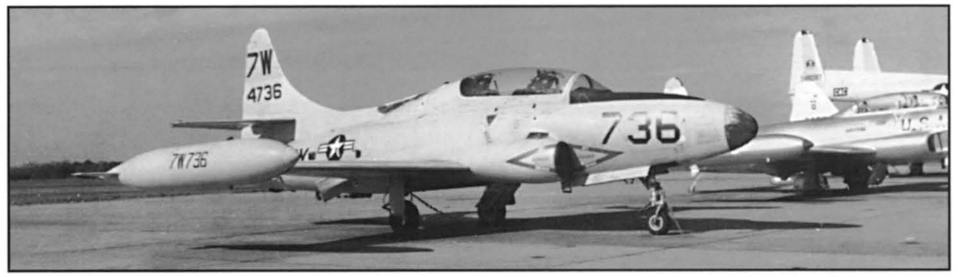
At right, all grey T-1A 144736 while assigned to NAS Willow Grove, IL, in October 1967. (via Clay Jansson)

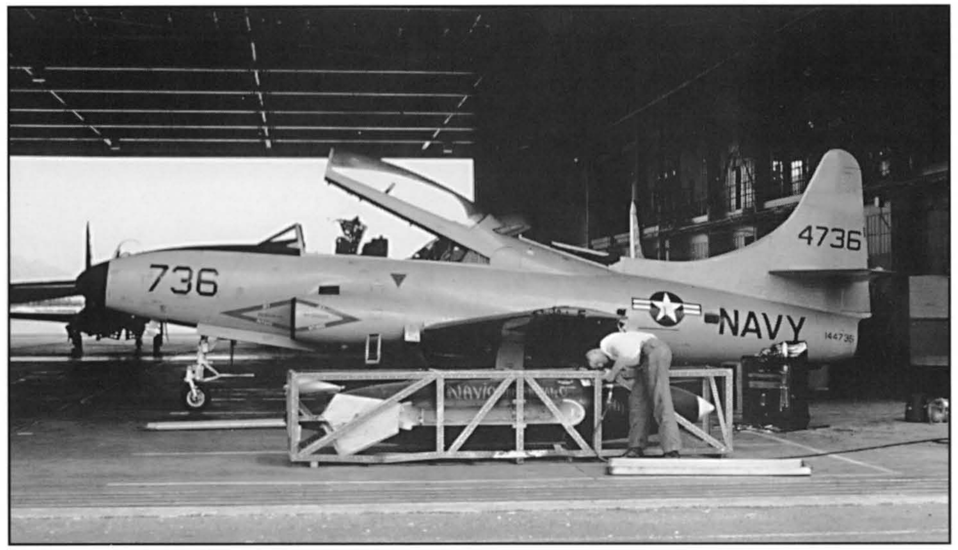
At right below, T-1A 144736 arrived at MCAS Kaneohe Bay, HI, in April 1969. The tip tank is being uncrated in one of "K-Bay's" hangers in preparation of being installed. The aircraft silhouette in the background was also a newly arrived T-1A Seastar. (Nick Williams)

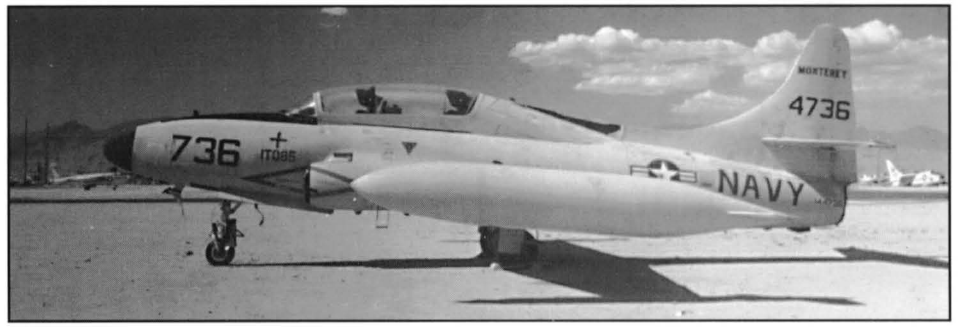
At right bottom, T-1A 144736 went from "K-Bay" to the Naval Post Graduate School at NAF Monterey, CA. The aircraft was seen at Davis Montham AFB on 11 November 1971 after its retirement. (William Swisher)

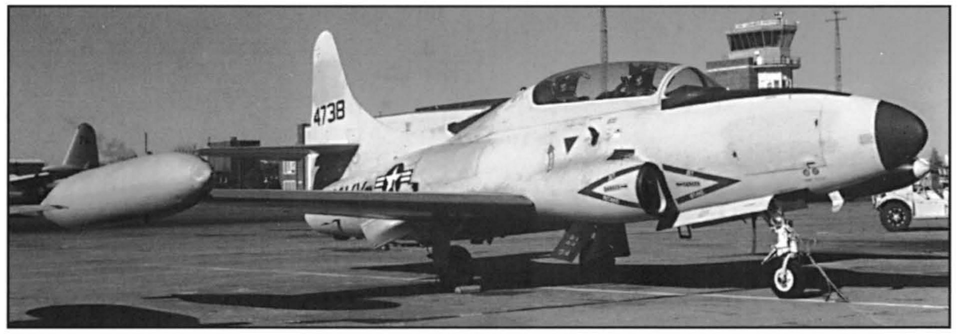


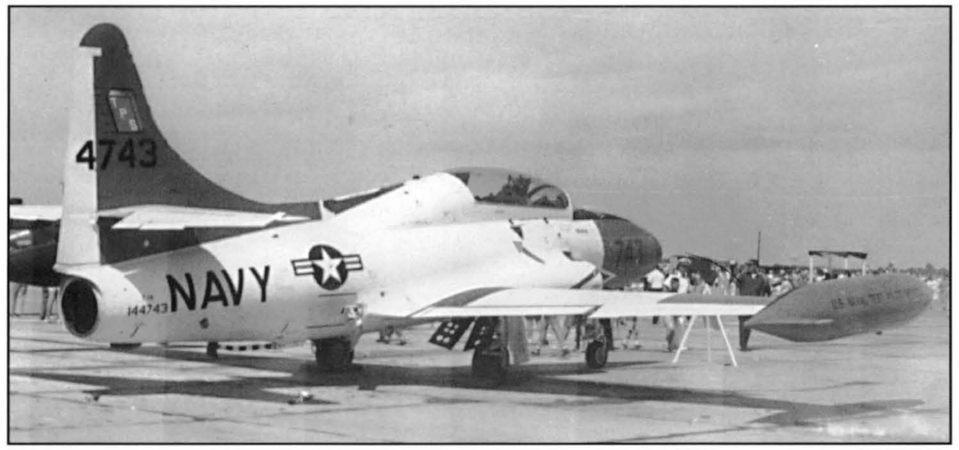


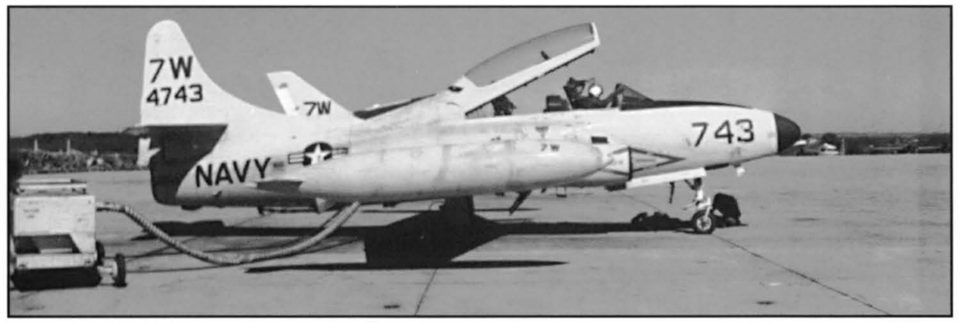


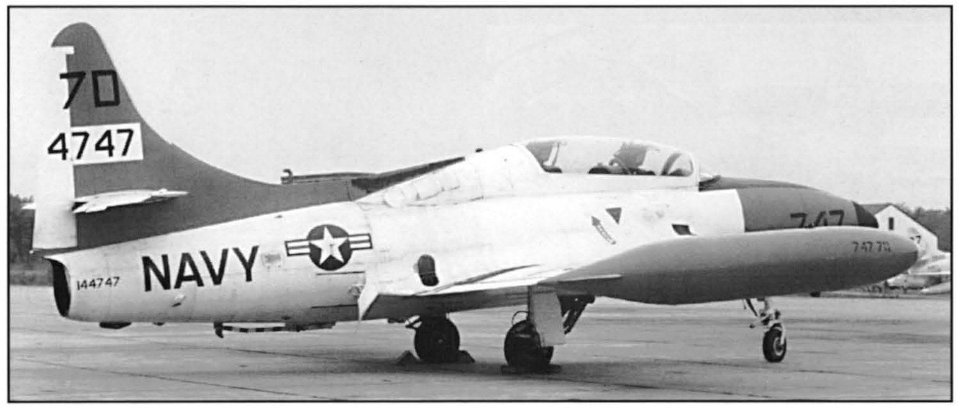


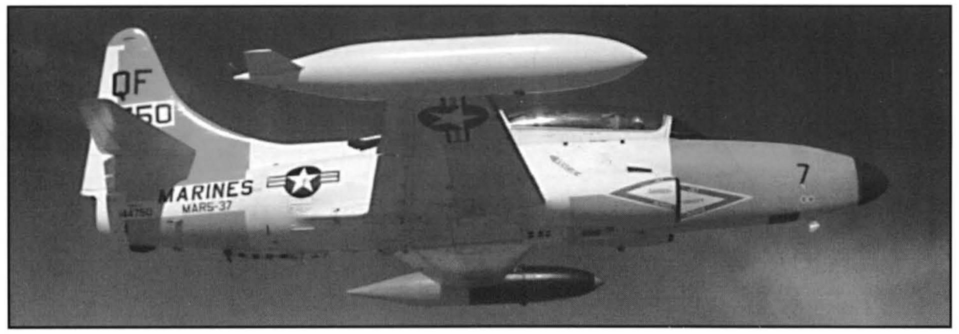












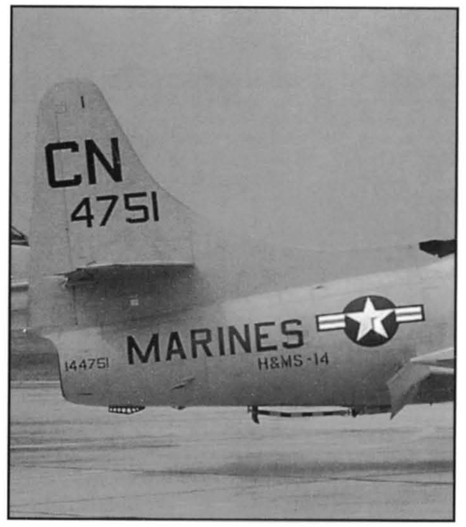
At left top, T-1A 144738 at NAS Olathe on 29 November 1969 with the tail code and nose numbers painted out. (Fred Roos)

At left, T-1A 144743 from the Naval Test Pilot School, based at NAS Patuxent River, MD, in 1966. Aircraft was painted white with red trim. (Jim Burridge)

At left, faded all grey T-1A 144743 was assigned to NAS Willow Grove on 12 September 1970. (Robert O'Dell via Doug Slowiak)

Below left, T-1A 144747 was assigned to NAS Dallas in September 1969 and still carried the white and red paint scheme. (Lionel Paul via Fred Roos)

At left bottom, T2V-1 144750 from MARS-37 in flight near MCAS El Toro in December 1962. The aircraft was white with da-glo orange trim. The inside halves of the tip tanks were black. (USMC via Fred Roos)



Above, the tail of T-1A 144751 while assigned to H&MS-14 in October 1968. (via Burger)

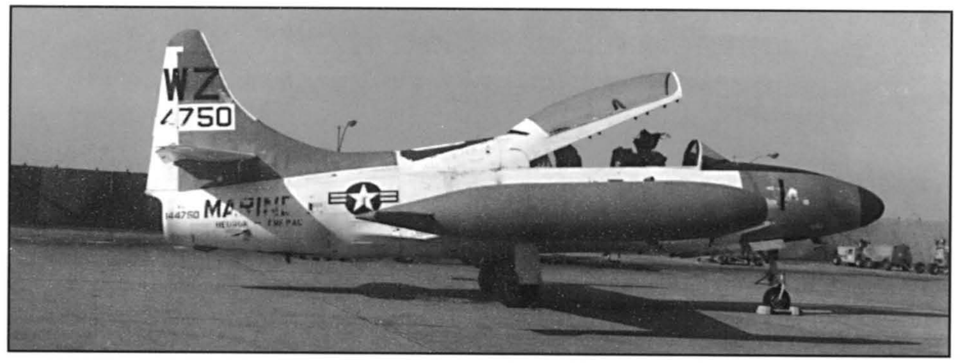
At right top, T-1A 144750 from HEDRON FMF PAC at NAS Alameda, CA, on 10 January 1967 prior to rework. (William Swisher)

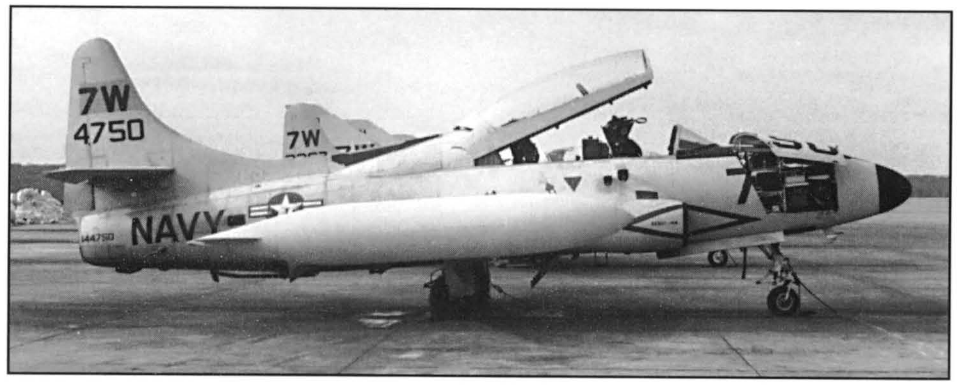
At right, T-1A 144750 after rework on 27 February 1969 while assigned to NAS Willow Grove. Note the open electronic bay in the nose. (Norm Taylor via Doug Slowiak)

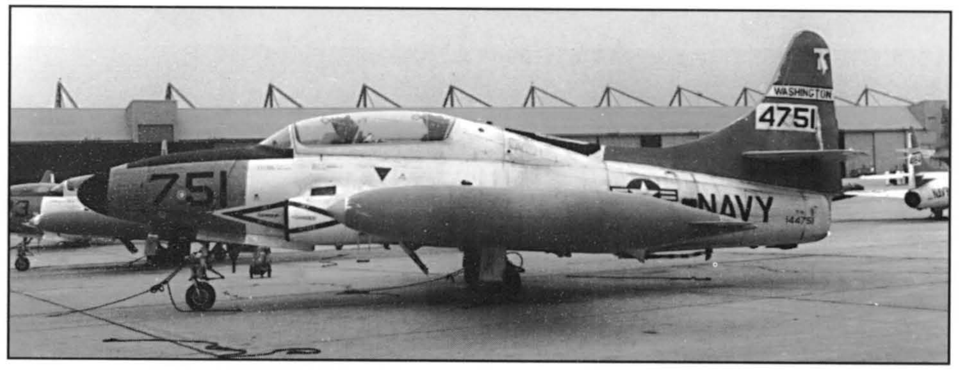
At right, T-1A 144751 while assigned to NAF Washington D. C. on May 1965. The aircraft was white with da-glo red/orange trim. (Clay Jansson)

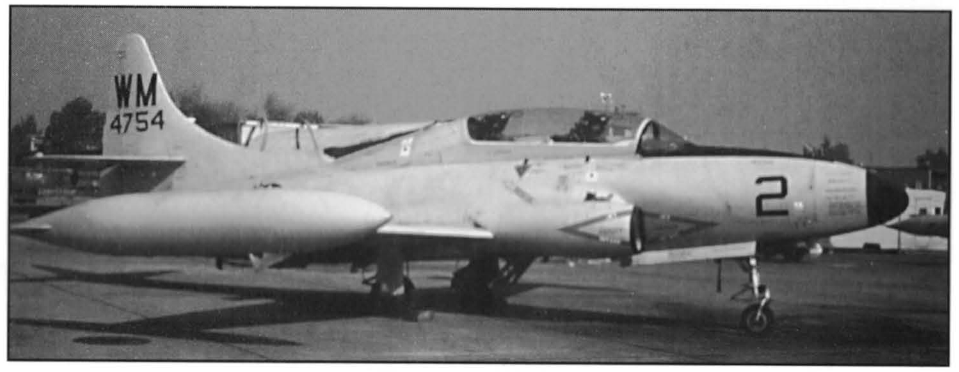
At right below, all grey T-1A 144754 from H&MS-33 on 19 November 1966. (via Iain MacPherson via Slowiak)

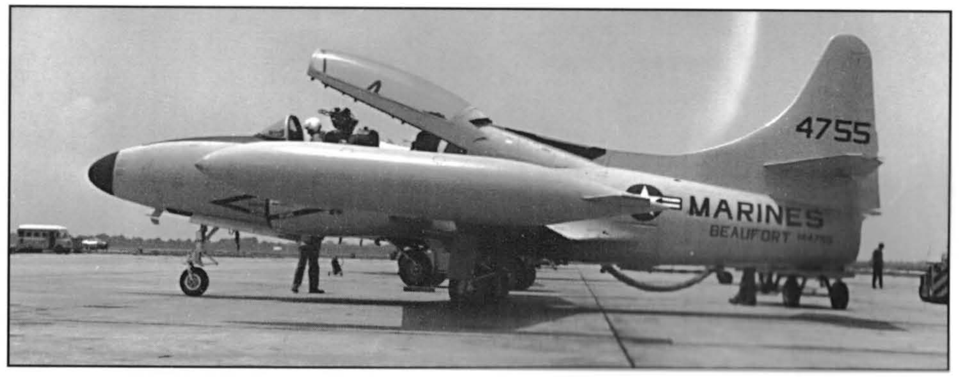
At right bottom, T-1A 144755 was unusual in that it carried no tail code or nose number. The aircraft was assigned to MCAS Beaufort, SC, on 29 May 1967. (William Swisher)

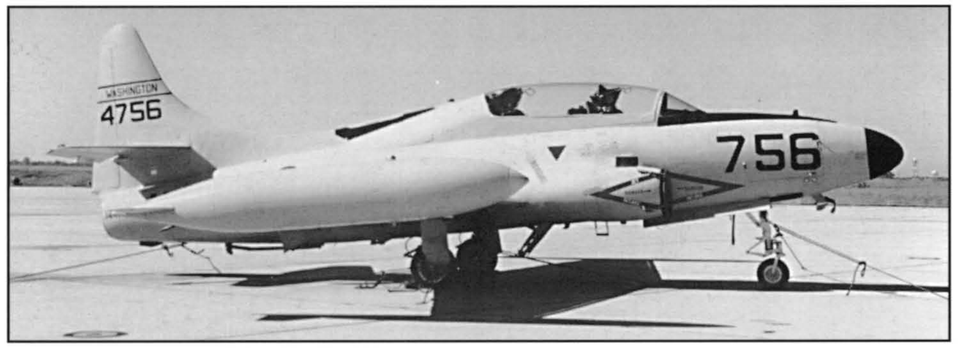


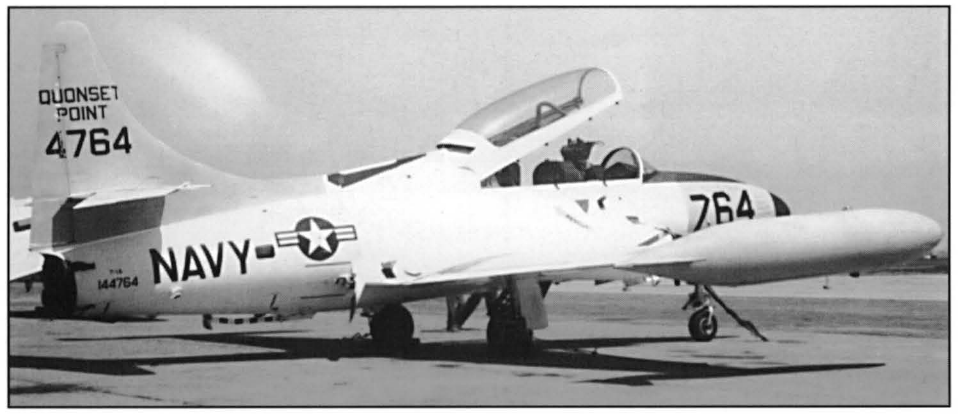






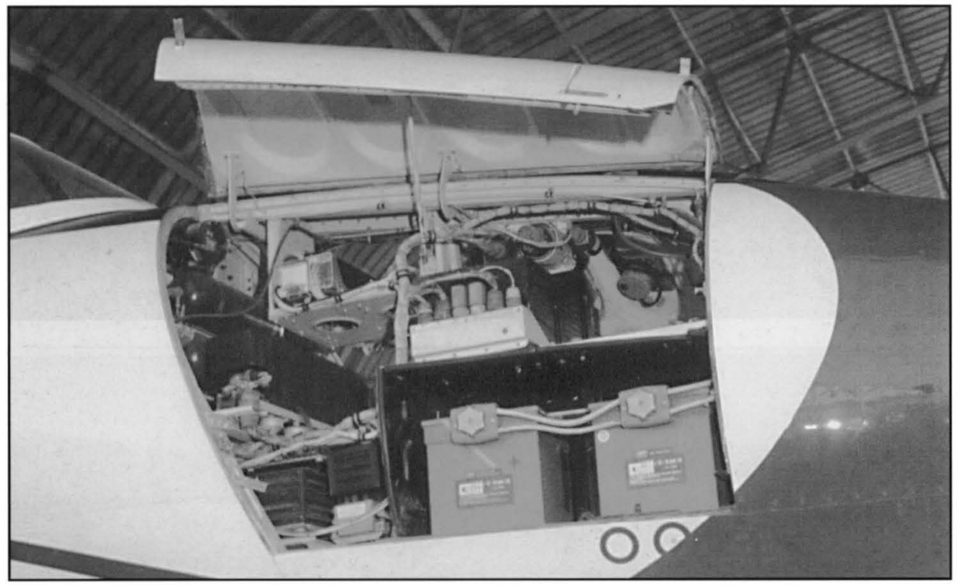






At left top, all gray Washington based T-1A 144751. (Nick Williams)

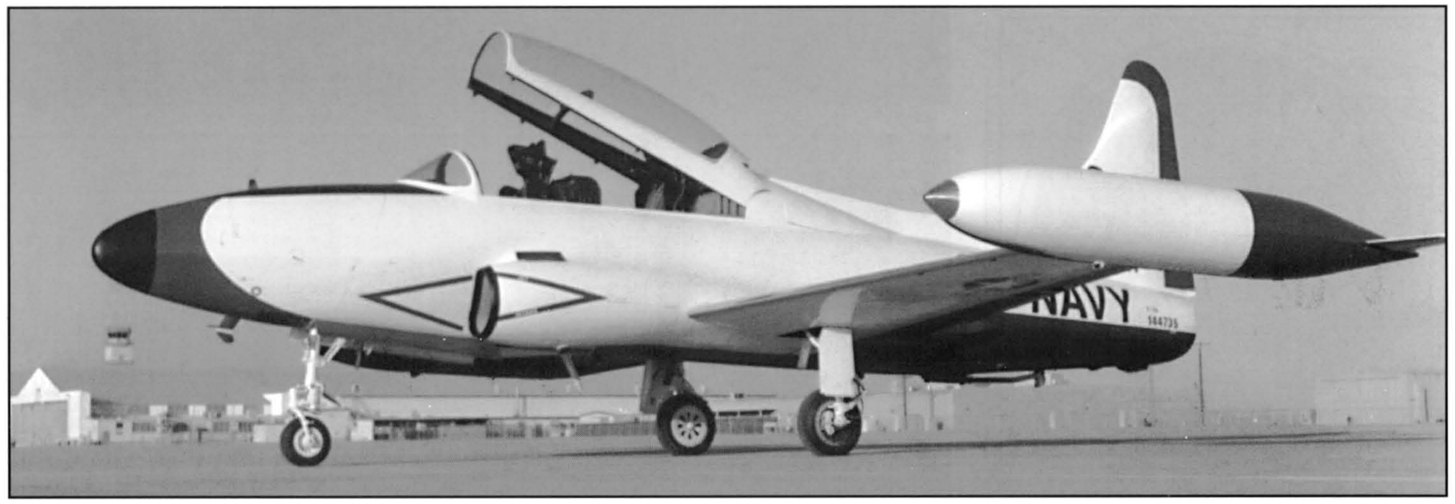
At left, NAS Quonset Point based T2V-1 144764 in white and da-glo red-orange paint scheme.



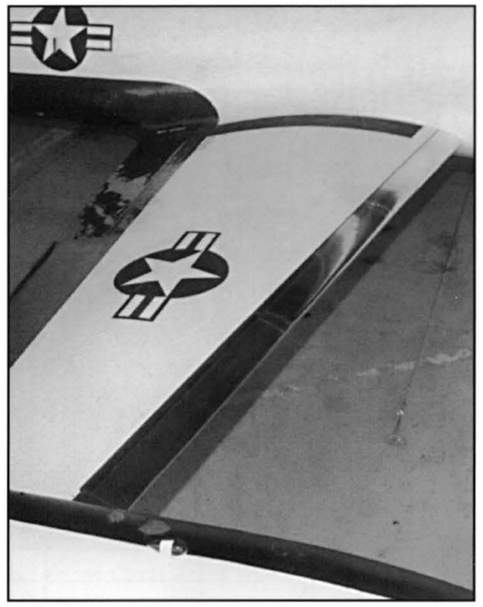
CIVILIAN T-1A 144735

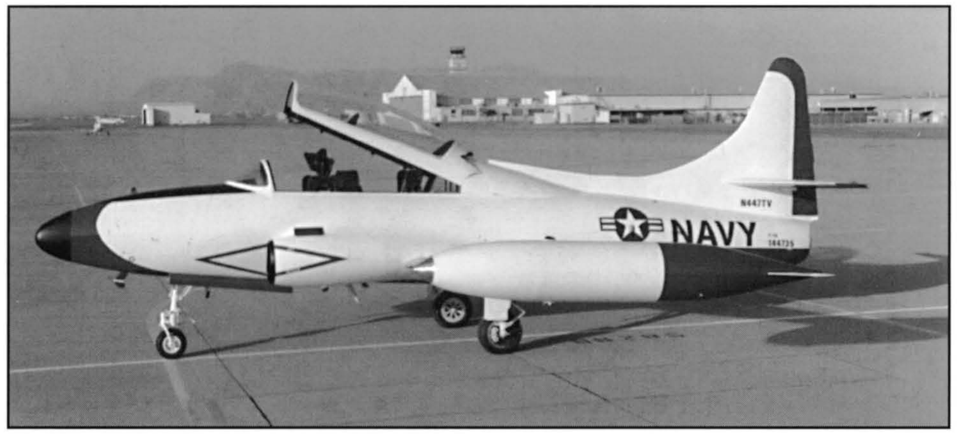
At left, right-hand electronics bay door and electronics equipment on civilian T-1A 144735. (Doug Slowiak) Below, aircraft ready to go at Phoenix, Arizona. (Doug Slowiak)

ANYONE WISHING TO EXPERIENCE THE THRILL OF FLIGHT IN THE T-1A SEASTAR CONTACT FUEL FRESH INC., PHOENIX, ARIZONA.

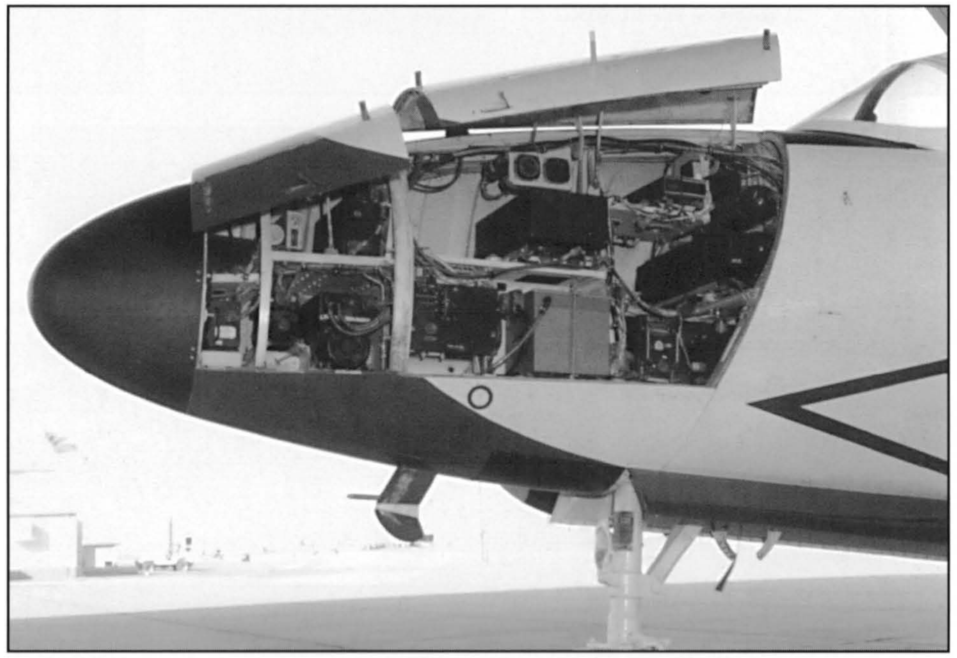


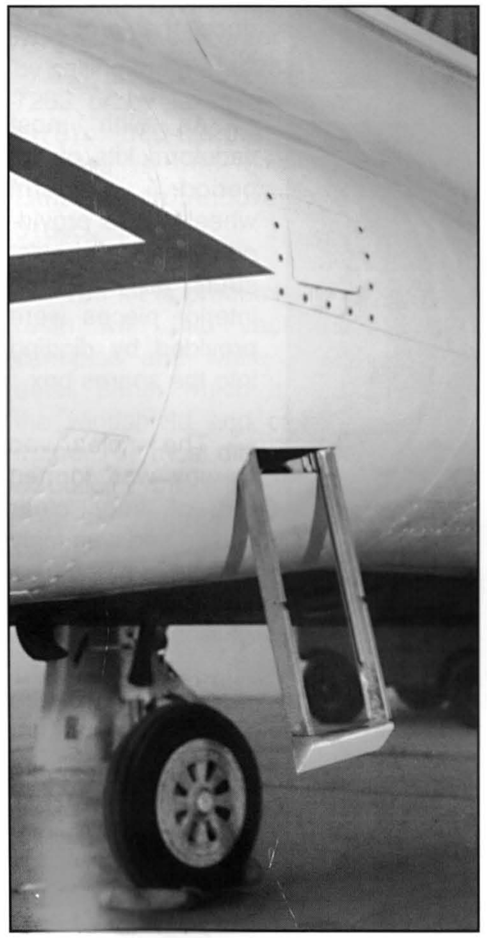
PHOENIX BASED CIVILIAN T-1A, BuNo 144735

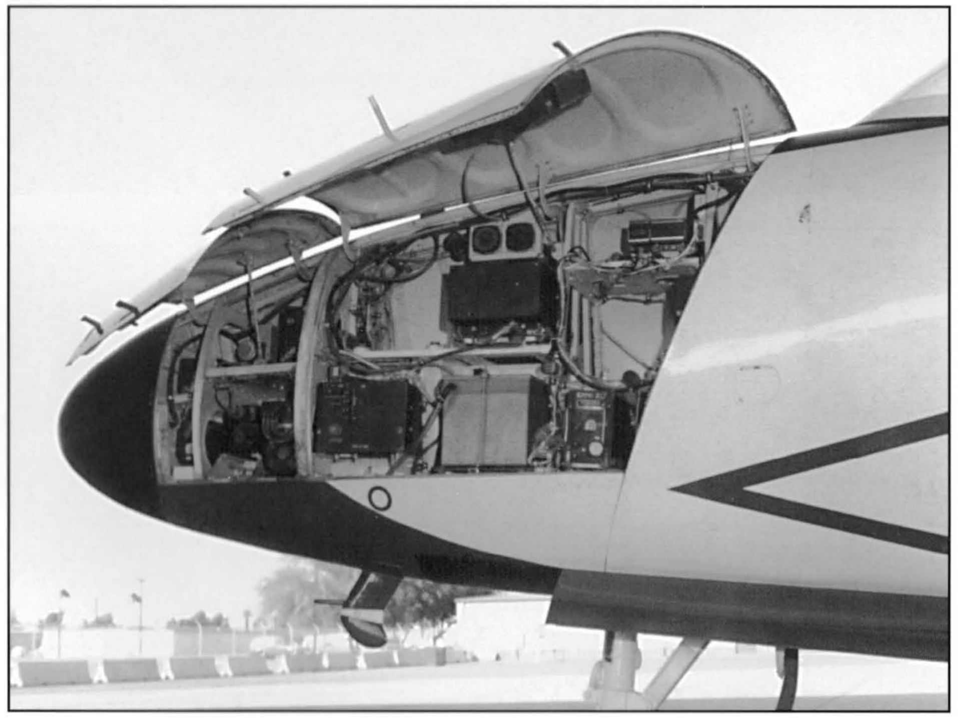




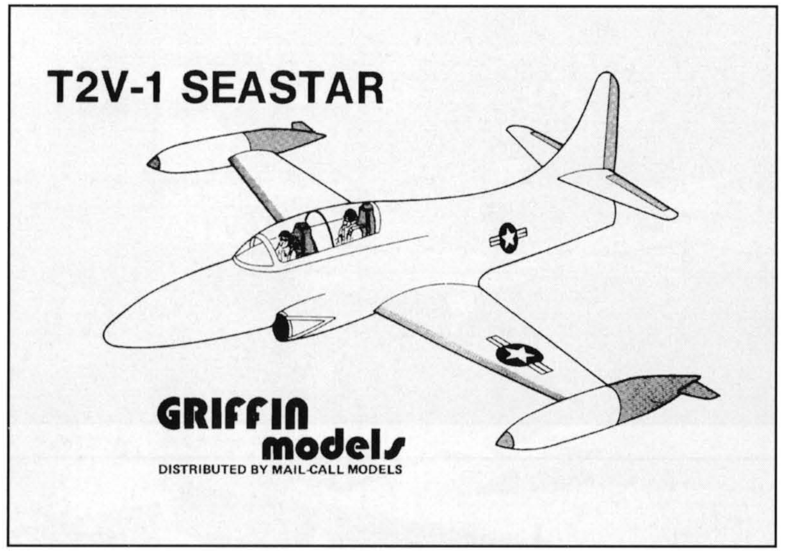
Above, leading edge slats from above. Above right, T-1A 144735 was finished in the early delivery scheme of white and da-glo red-orange. At right, two-views of the left-hand electronic bay and doors. Below, pilot's first step in the extended position. (Doug Slowiak)

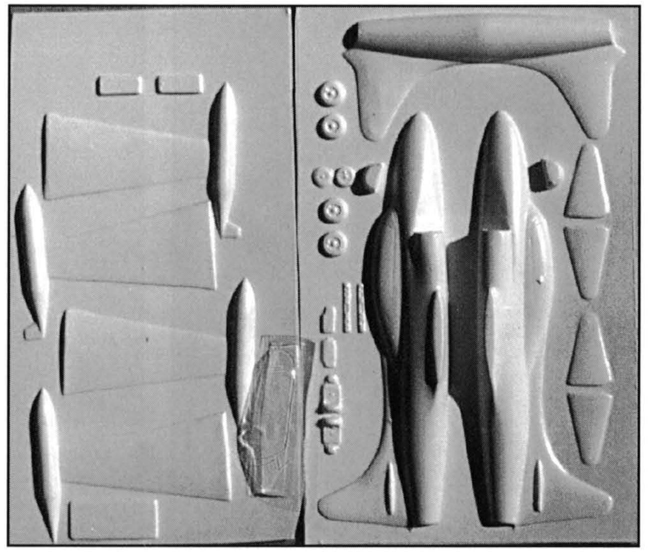


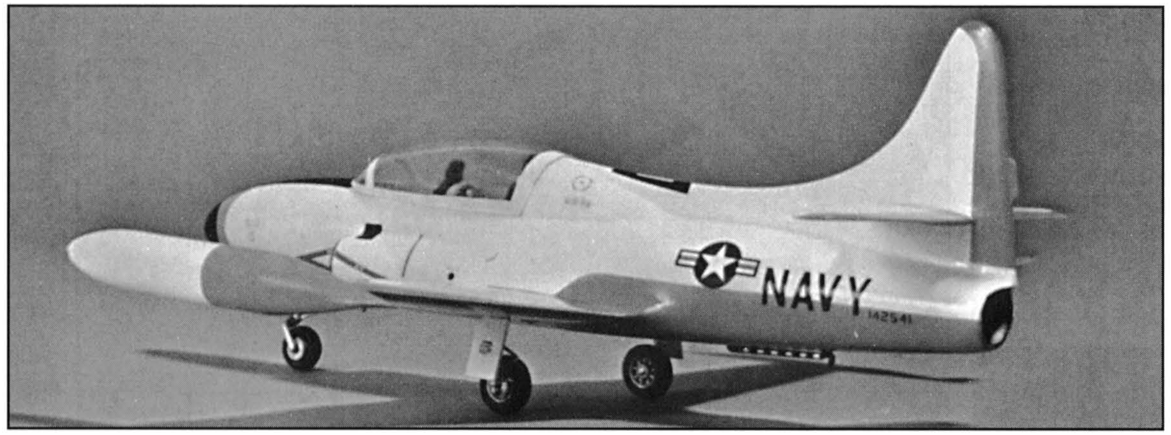


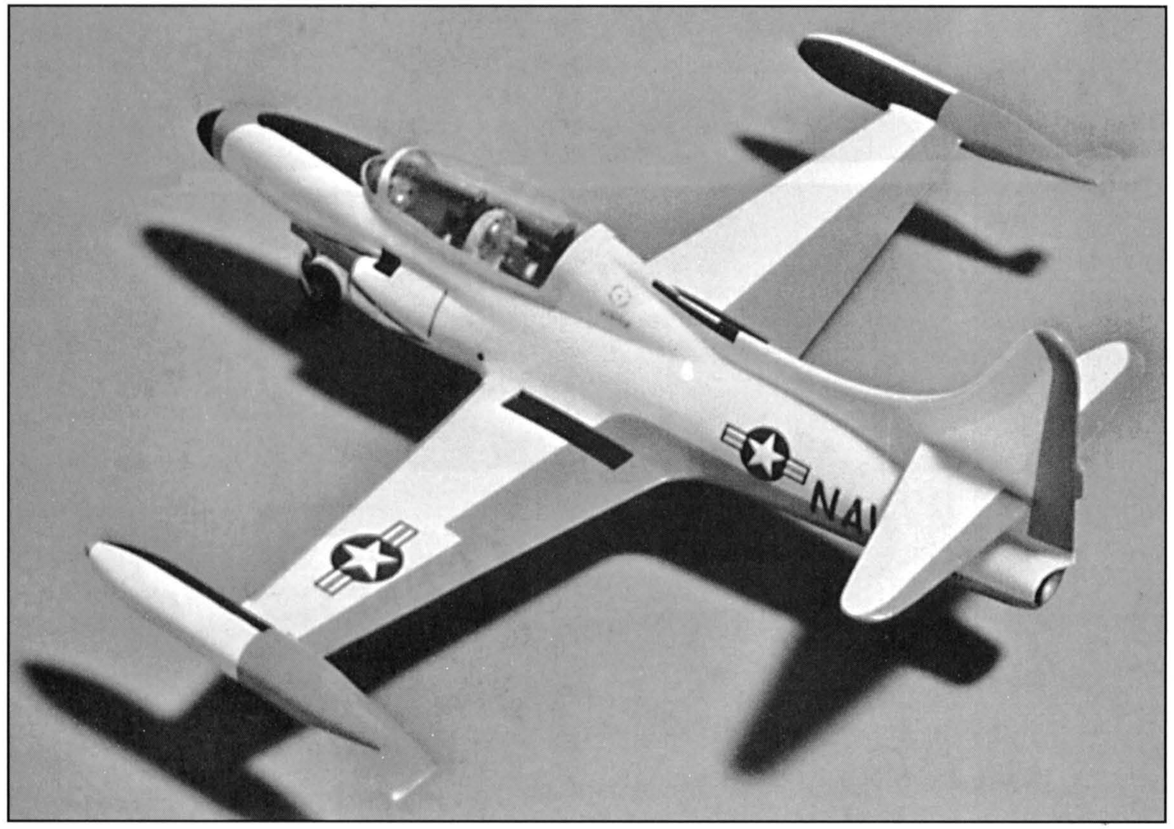


1/72 SCALE T2V-1 VACUFORM SEASTAR BY GRIFFIN MODELS









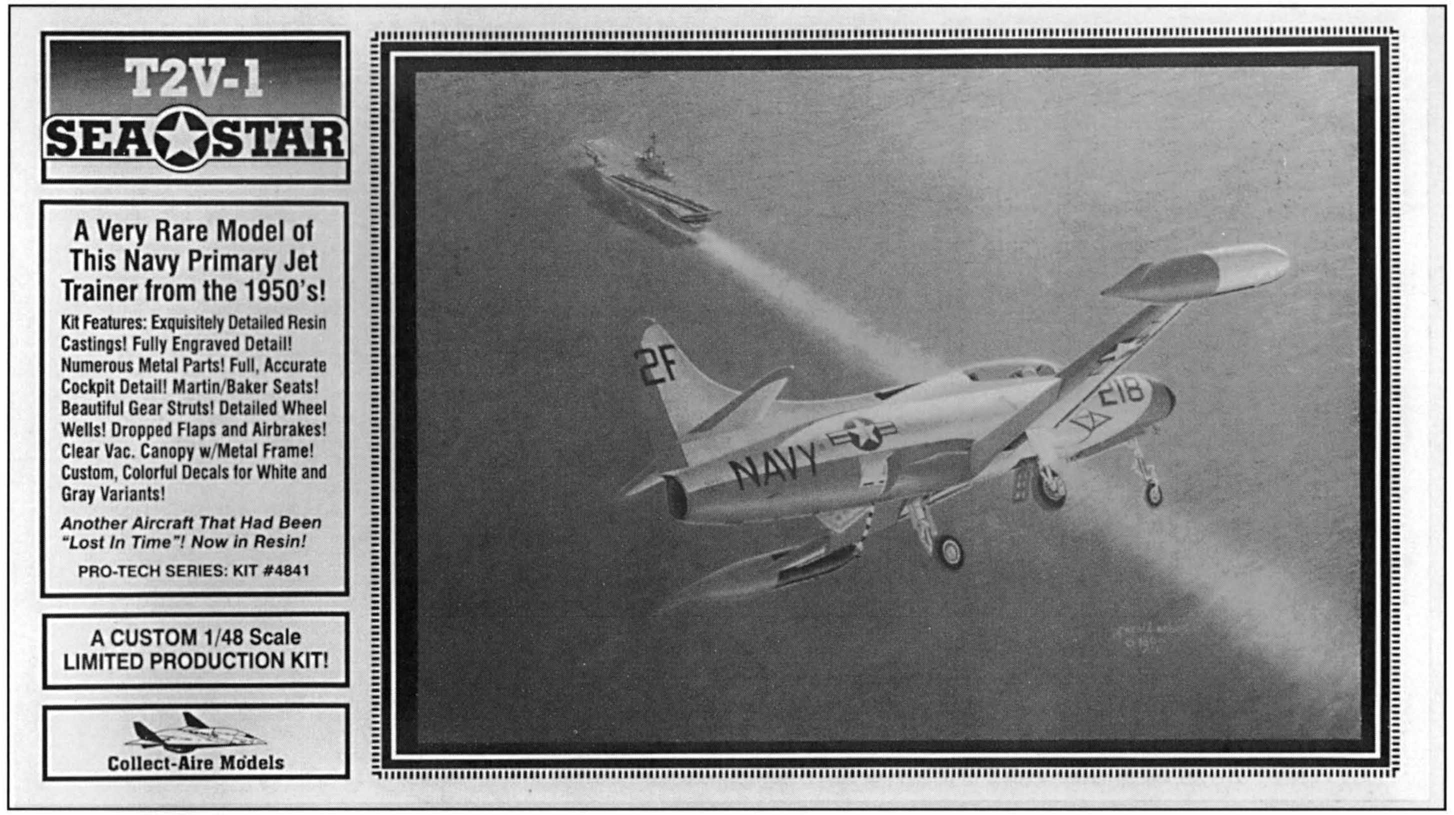
In the late 1970s Griffin Models produced a nicely mastered vacuform kit of the Lockheed Seastar. The kit came with an optional rear fuselage so that the builder could produce the prototype N-125D.

As with most vacuform kits of the period, vacuform wheels were provided. Instead, wheels, struts, tail hook and interior pieces were provided by digging into the spares box.

The clear-vac canopy was formed out of very clear plastic and was fairly easy to trim and glue into place using white glue.

The model was painted to represent the original factory paint scheme, as applied to the first dozen or so test aircraft delivered to the Navy.

COLLECT-AIRE MODELS 1/48 SCALE RESIN T2V-1/T-1A SEASTAR



T2V-1 SEASTAR

A Very Rare Model of This Navy Primary Jet Trainer from the 1950's!

Kit Features: Exquisitely Detailed Resin Castings! Fully Engraved Detail! Numerous Metal Parts! Full, Accurate Cockpit Detail! Martin/Baker Seats! Beautiful Gear Struts! Detailed Wheel Wells! Dropped Flaps and Airbrakes! Clear Vac. Canopy w/Metal Frame! Custom, Colorful Decals for White and Gray Variants!

Another Aircraft That Had Been "Lost In Time"! Now in Resin!

PRO-TECH SERIES: KIT #4841

A CUSTOM 1/48 Scale LIMITED PRODUCTION KIT!

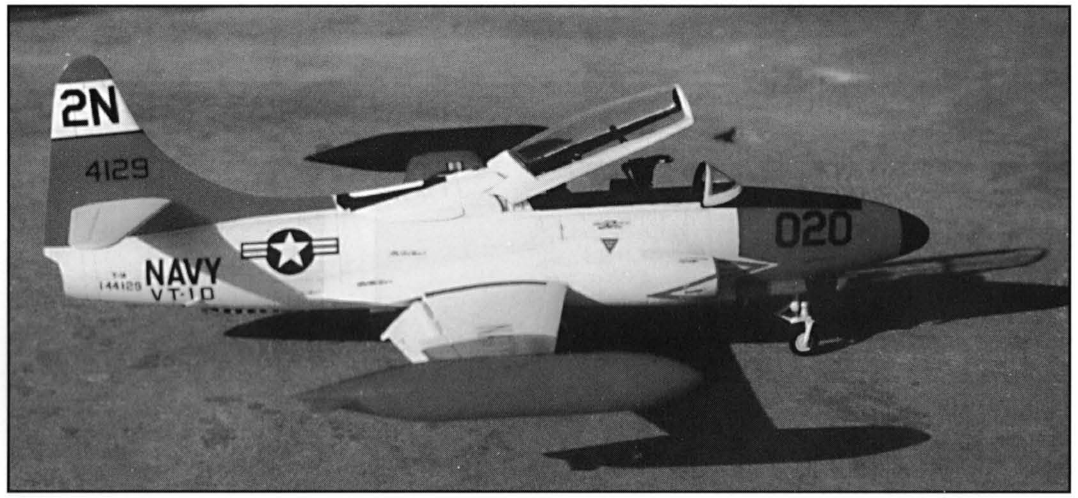
Collect-Aire Models

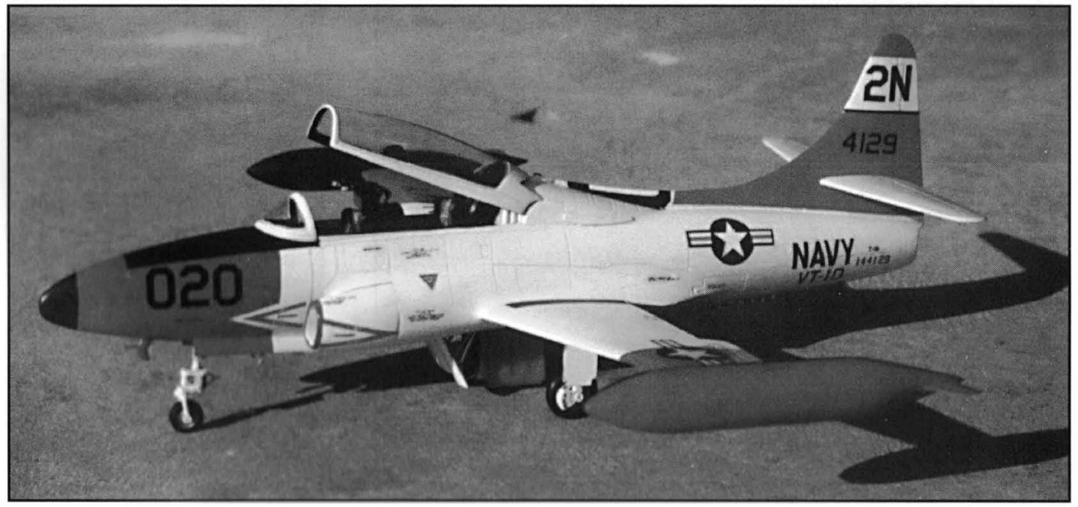
MODEL BY LEE REINITZ

Our sample model was provided by Collect-Aire Models. You can order yours by calling them at (978) 688-7283 or by faxing them at (978) 685-0220. Their address is 166 Granville Lane, North Andover, MA 01845.

The kit is predominately resin with two vacuform canopies and white metal detail parts, which include the windshield and canopy frame. The most difficult part of building this kit is the fitting and trimming of the clear-vac canopy and windscreen to the white metal frames. The kit provides dropped flaps and positonable belly dive-brakes.

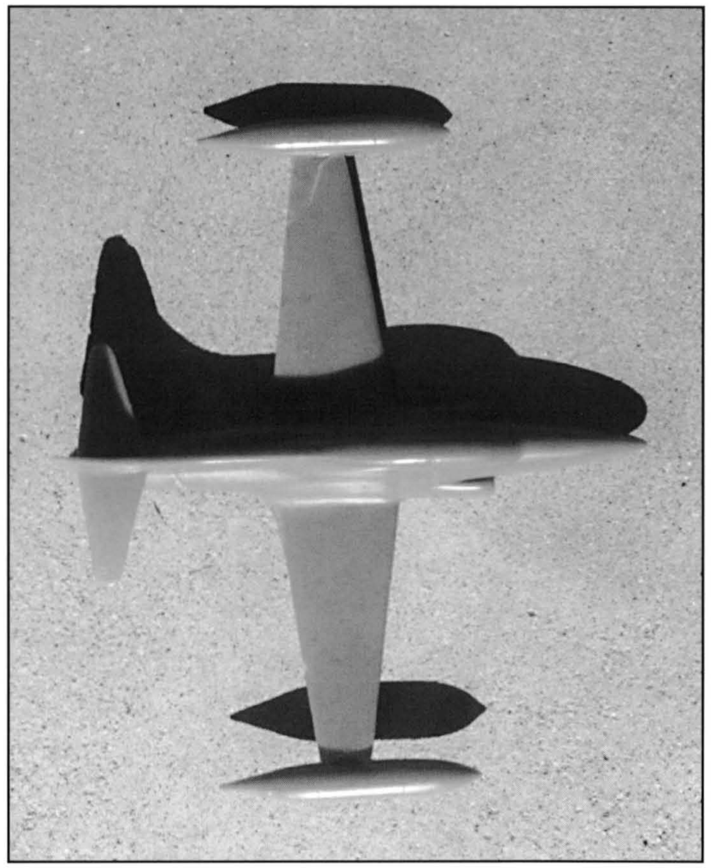
Lee built up our kit in the markings of VT-10, as used to train Naval Flight Officers at NAS Pensacola. The kit provides markings for Basic Training Group Nine (BTG-9) in 1959.

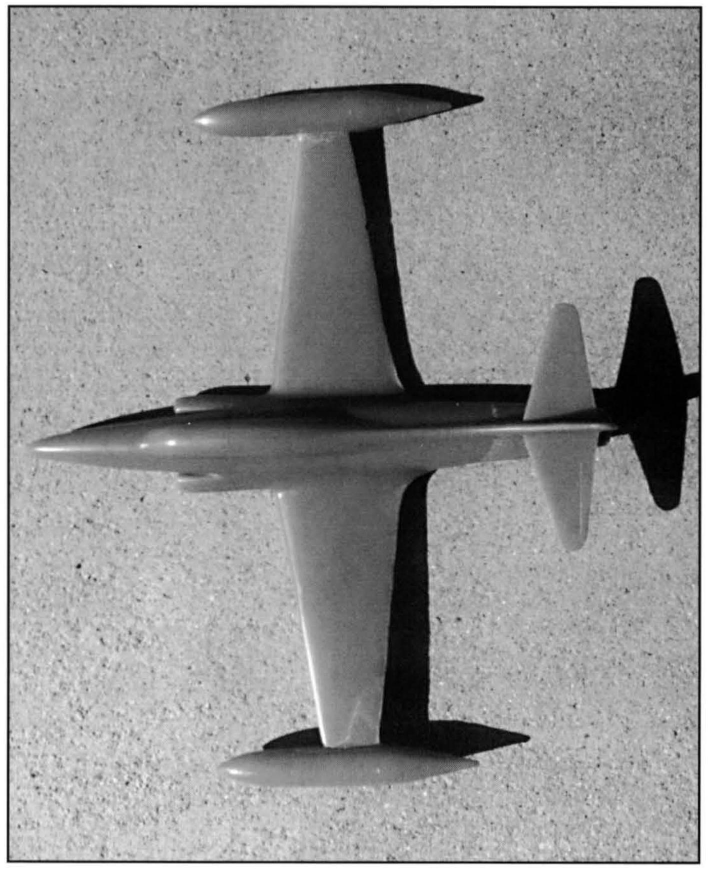


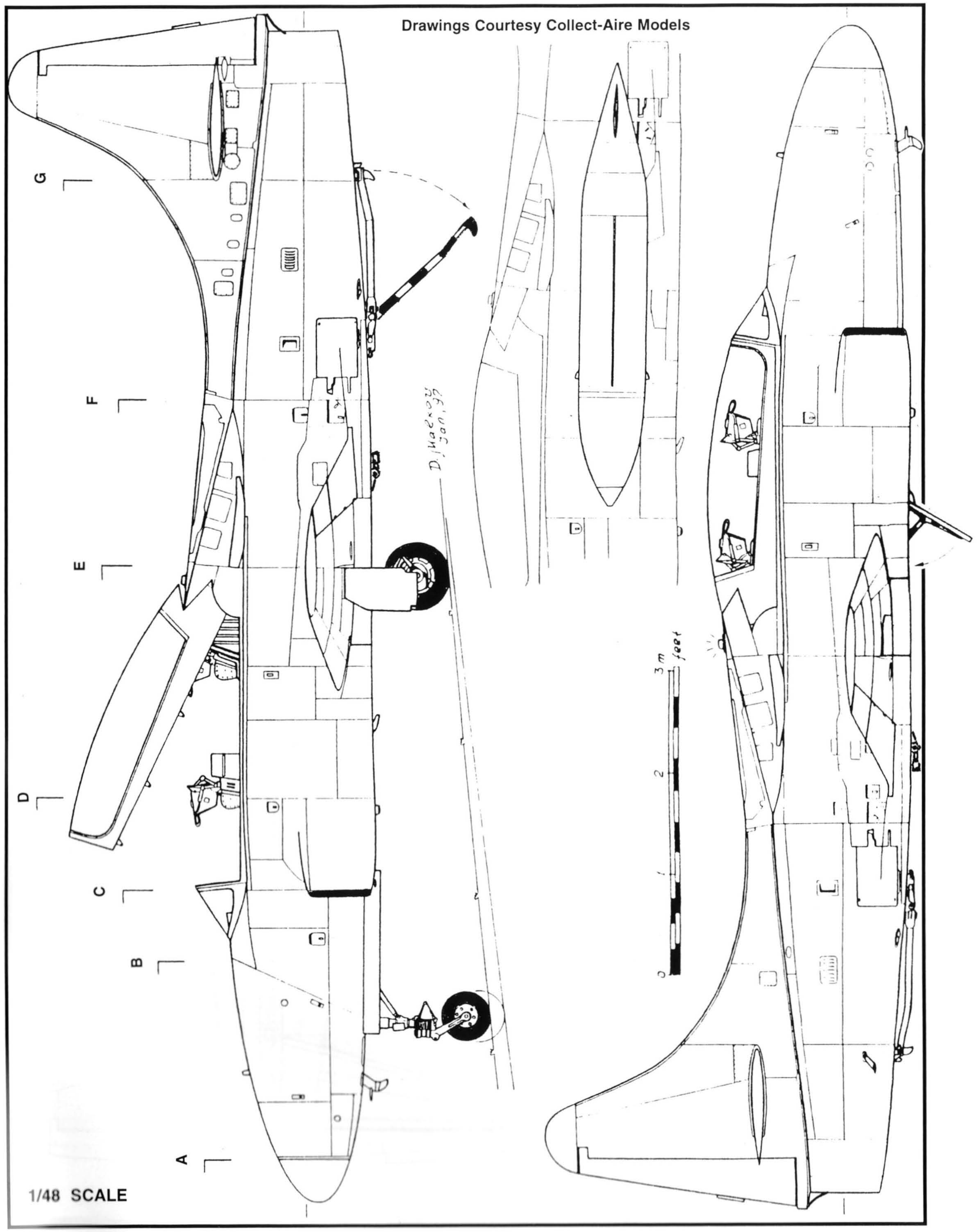


MANUFACTURER DISPLAY MODEL

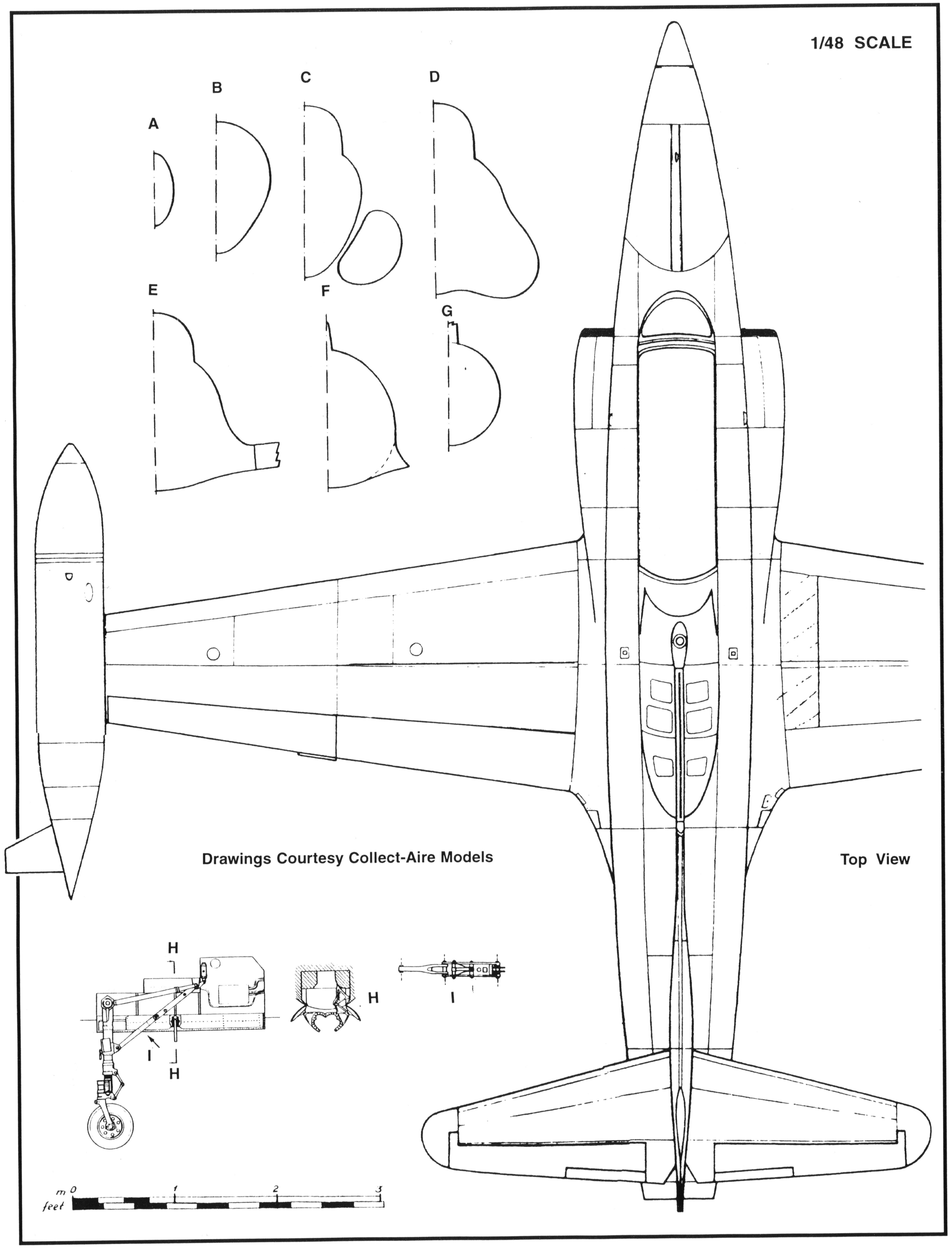
RESIN ID MODEL






Drawings Courtesy Collect-Aire Models

1/48 SCALE



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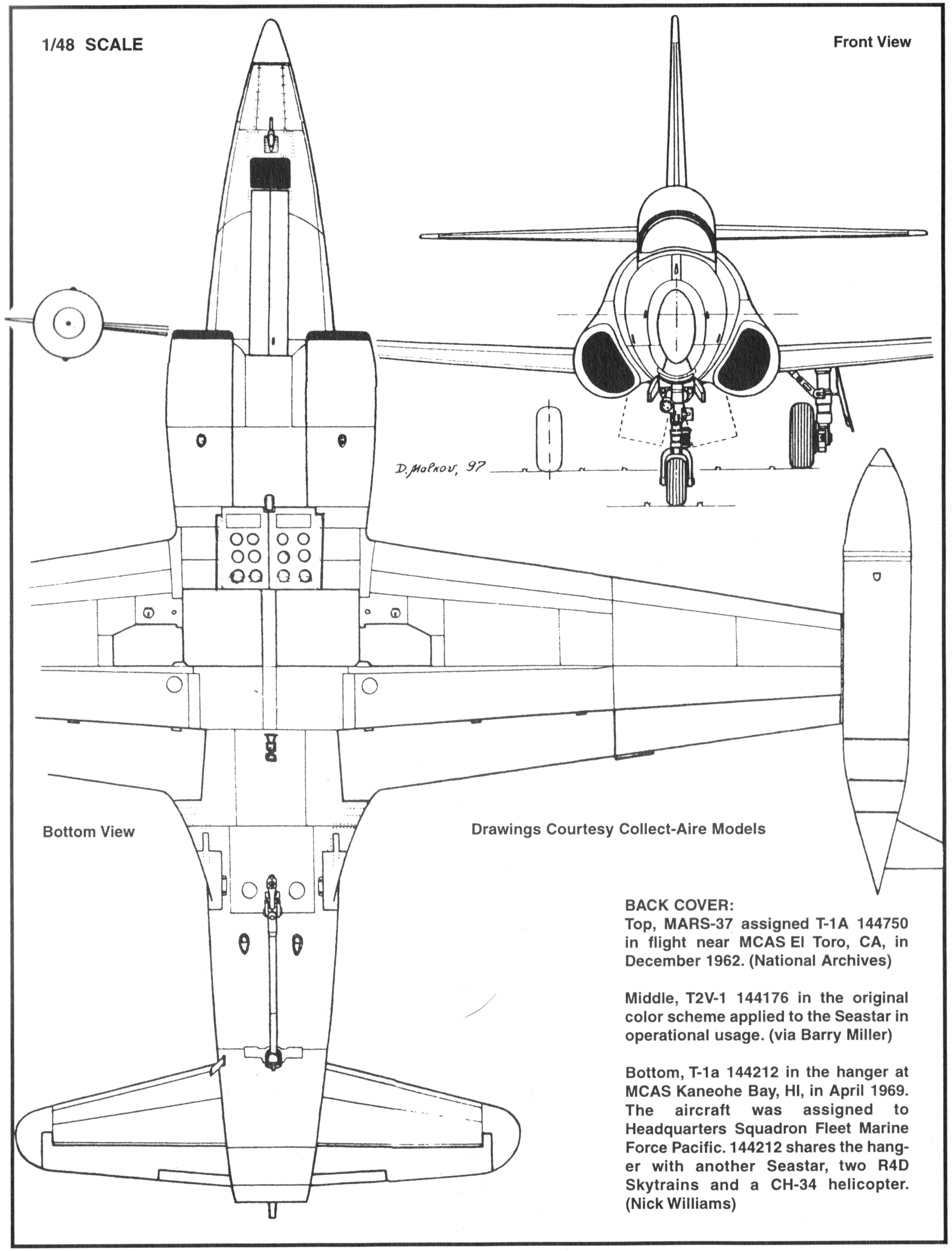
Top View



Bottom View

Drawings Courtesy Collect-Aire Models

BACK COVER:
Top, MARS-37 assigned T-1A 144750 in flight near MCAS El Toro, CA, in December 1962. (National Archives)

Middle, T2V-1 144176 in the original color scheme applied to the Seastar in operational usage. (via Barry Miller)

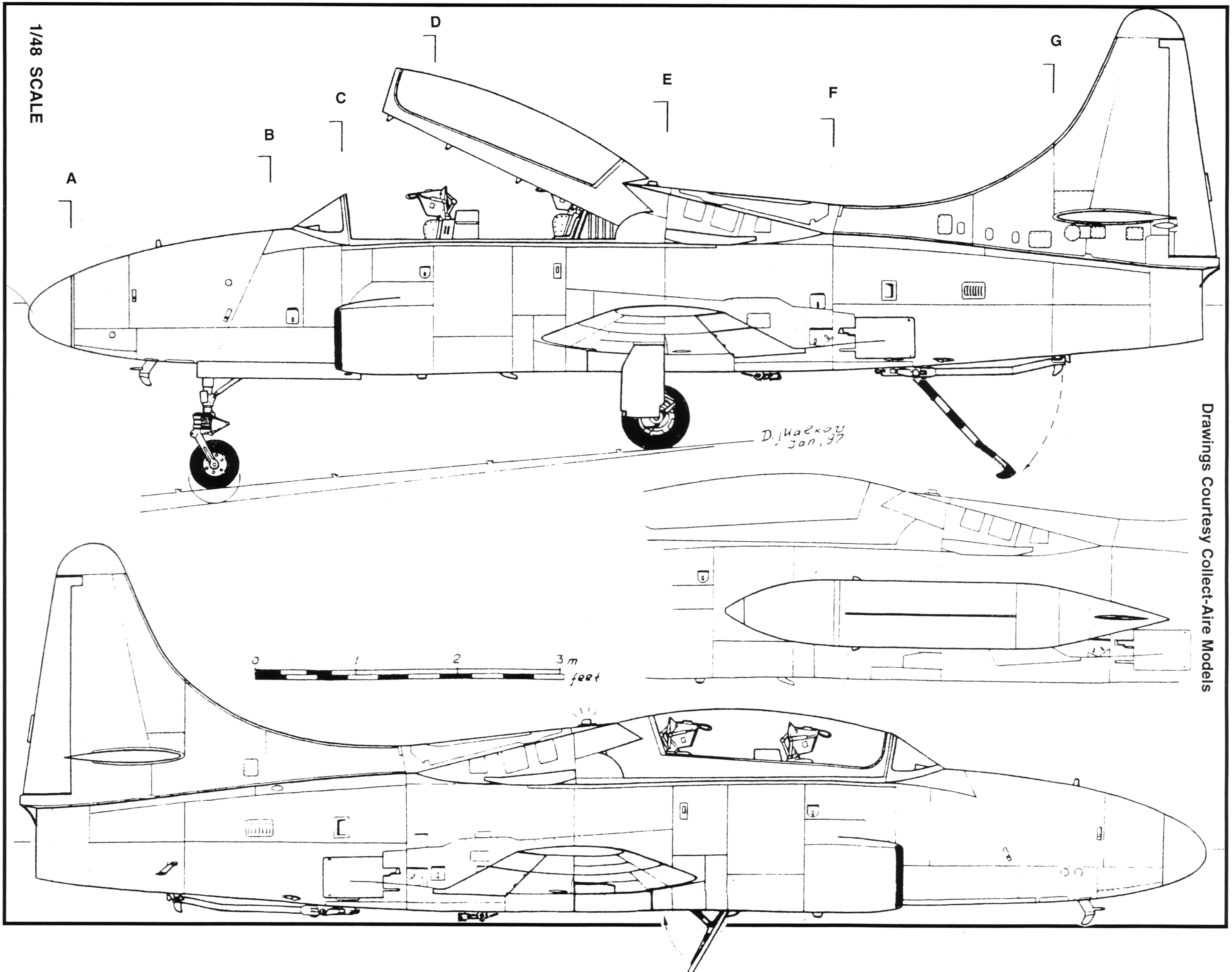
Bottom, T-1a 144212 in the hanger at MCAS Kaneohe Bay, HI, in April 1969. The aircraft was assigned to Headquarters Squadron Fleet Marine Force Pacific. 144212 shares the hanger with another Seastar, two R4D Skytrains and a CH-34 helicopter. (Nick Williams)

QF
750
MARINES
MARS-37
144750
7

49
2M
44176
249
4M
44177

UNITED STATES MARINES
NEOHE
BAY
WZ
50809
2
WZ
4212
MARINES
144212
HEDRON FMFPAC
3

1/48 SCALE



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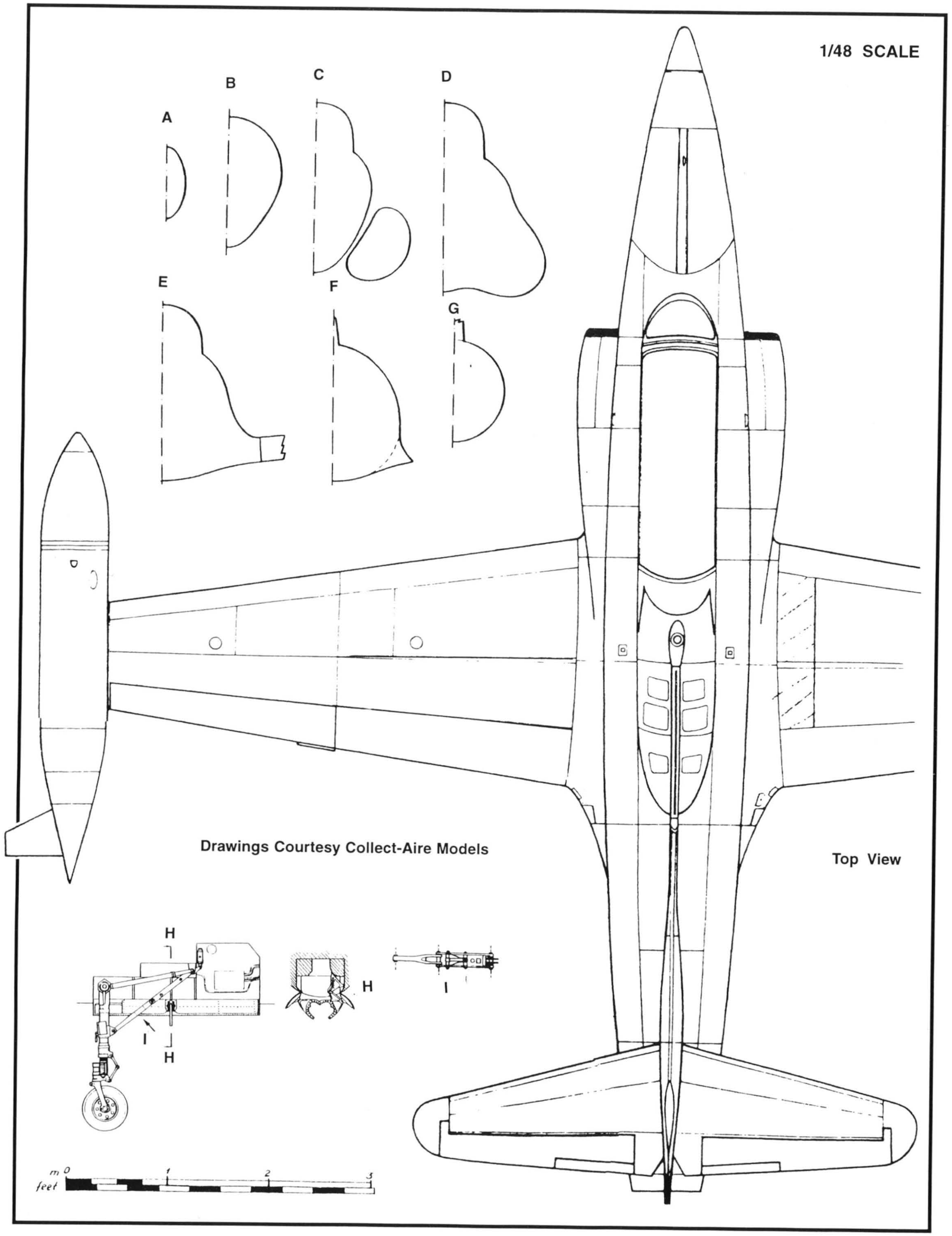

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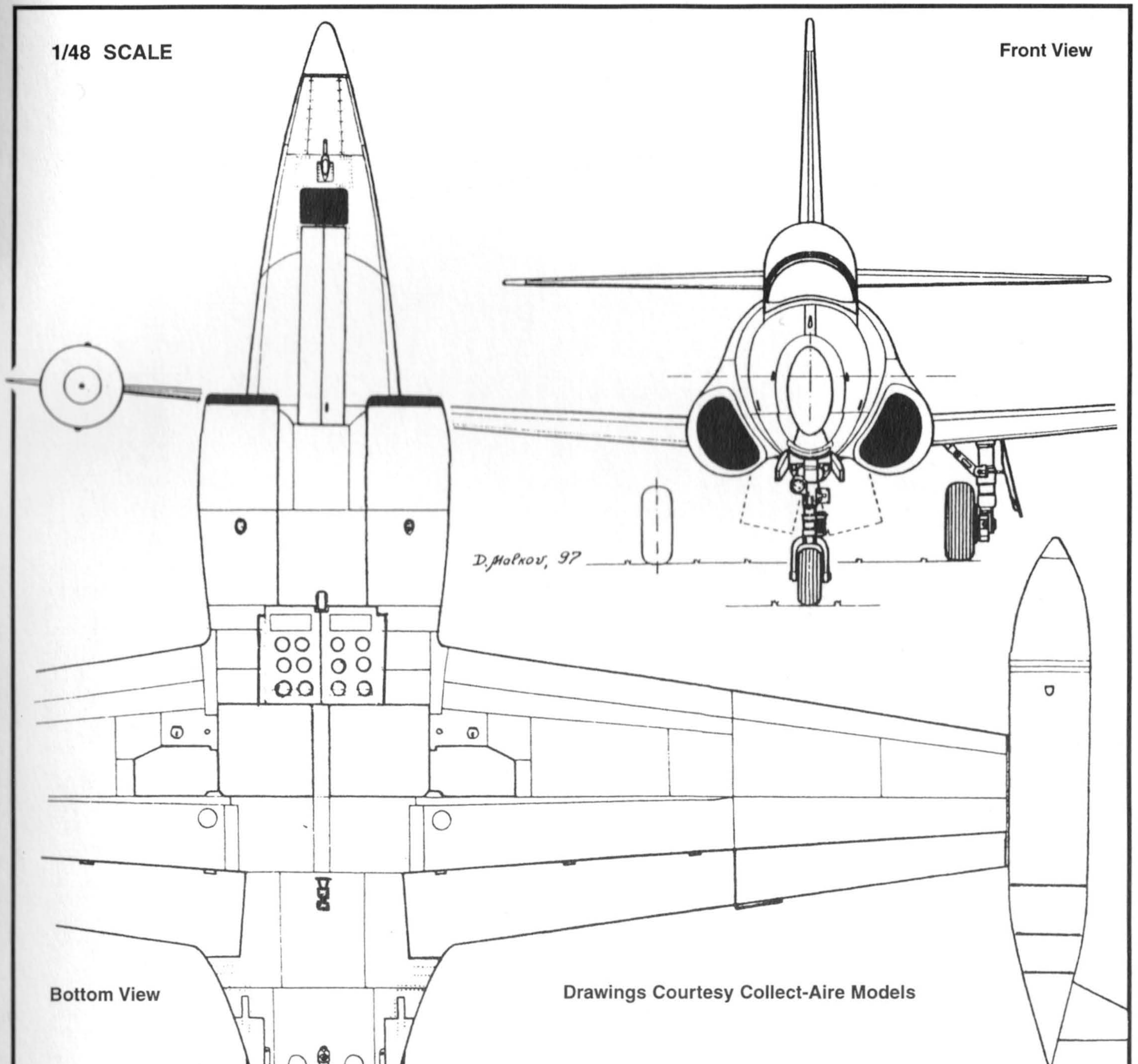

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